CURRENT NOTES

Helping Atari Owners Through the World of Computing

Vol. 13, No. 5

June 1993
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In this Issue:

CN 1305

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Quantum 127Meg 17Ms -$262
Quantum 170Meg 17Ms -$291
Quantum 240Meg 16Ms - $390
Quantum 525Meg 12Ms -$952
Quantum 700Meg 10Ms -$1162
Quantum 1.05Gig 10Ms -$1302
Quantum 1.25Gig 10Ms -1450
21Meg Floptical w/1disk - $292
21 Meg Floptical Disks - $24
Syquest 44M removable - $329
Syquest 88M removable - $390
Syquest 88/44 removable - $480
44 carts- $72 88 carts-$115

Misc Hardware

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ICD Adscsi Micro (Mega's) - **$77**
ICD Link host adaptor- $99
50 pin SCSI cable- $10
ICD Cleanup ST - $25
Mega Touch Springs - $9.49.
Monitor Stand w/5 outlets- $46
Mouse Master - $26
Mouse mats - $5
Mouse (Opto-Mechanical) - **$37**
Mouse (Opto-Mech. w/Deluxe paint)- **$45**
Mouse (Optical)- $75
Mouse (Cordless)- $80
Mousestick (Gravis)- **$65**
Panasonic KPX-1124i - $319.95
Panasonic KPX-1123 - $234.95
AT Speed C16 (16MHZ)- **$369**
Spectre GCR(cart)- **$215**
Printer or Modem Cable - $7
Star NX1001 - $149

Misc Hardware

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Epson Action Printers - Call!!
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TEC Mega bus- $155
TOS 2.06 - $70
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Turbo 25ste-$299
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Vidi RGB - $109.95
Vidi Color Kit - $259.95
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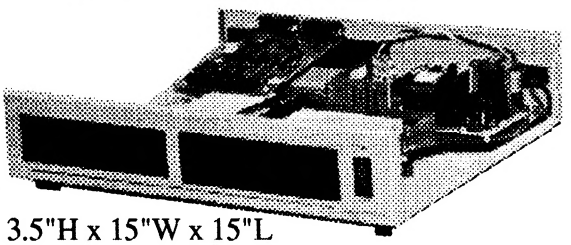

3.5"H x 15"W x 15"L

Case C: our deluxe Case $109.95

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HD Size	Case A	Case B	Case C
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85Megs	$374	$394	$414
105Megs	$394	$414	$434
127Megs	$424	$444	$464
170Megs	$453	$473	$493
240Megs	$552	$572	$592
525Meg	$1114	$1124	$1144
700Meg	$1324	$1344	$1364
1.05Gig	$1464	$1484	$1504
1.25Gig	$1612	$1624	$1644
21M Floptical	$464	N/A	$509
44 Syquest	$563	N/A	$583
88 Syquest	$667	N/A	$687
88/44 Syquest	$757	N/A	$777

21Meg Floptical in second opening w/1disk $292
(reads and writes 720K,1.44Meg & 21Meg disks)
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New Deluxe HD Case (replaces case C:) room for one 3.5"floppy or floptical, one low profile hd one 5 1/4" like Syquest or CD Rom or other SCSI drive...

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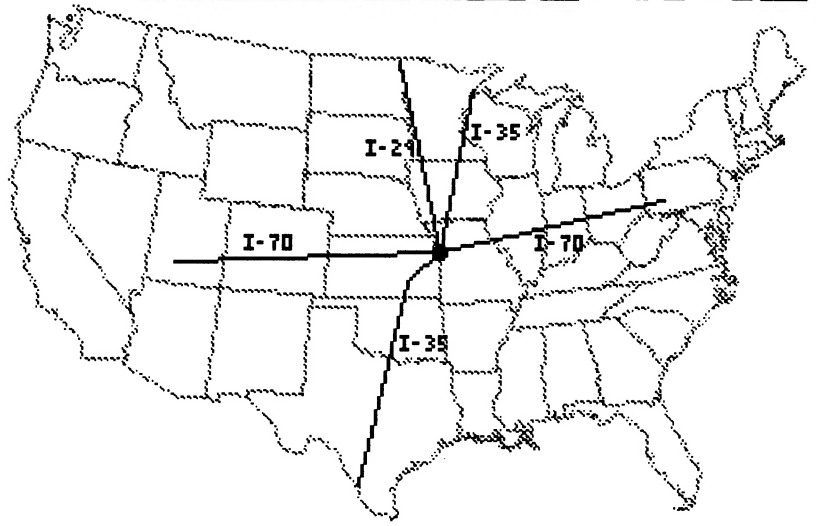

COME TO KC IN 93!

June 26th and 27th

Sponsored by KCAC. Tickets now available. $4 in advance, $5 at the door. Tables still available, but going fast! For more show information call Bruce at (816) 224-9021, or Bob at (816) 257-7950. For Hotel reservations call 1-800-325-7901. Special show airfares are available on TWA & Southwest, for information on airfares call 1-800-874-7691. For advance tickets write to the Kansas City AtariFest '93 - PO Box 1653 - Lee Summit MO 64063 (Allow 3 weeks for delivery).

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CURRENT NOTES

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Time to Renew?

Take a peek at your mailing label. If you see the expression **9306** on the first line, then your subscription expires in 1993, month 6, i.e. this June issue is the last one in your current subscription. If you see **9307** or **9308**, your subscription will soon expire. Please **RENEW** as soon as possible to avoid missing any issues of CN. You can renew using your MC or VISA card by calling (703) 450-4761. Many thanks for your continued support!

Moving?

Don't forget to send in a CHANGE OF ADDRESS notice if you are moving. Current Notes is distributed via 2nd class U.S. mail. The post office does not forward 2nd class publications; they throw them away!

The Cover: The long wait is over! The new Atari Falcon is, finally, available in the U.S. However, supply is very limited and you may have a long wait before you get yours.

STanding STill

by Steven Kiepe

Atari TT Back
No Dealer; No Falcon
No Criticism Please
Pirates Beware!

Hello, again. It's 18 May as I write this, sitting once again at my recently revived *Mega ST* (bad power supply). Why is the date important? Today, according to Bob Brodie, the first shipment of Atari Falcon 030 computers for retail sale are supposed to be arriving at the dock. About a week from now, this first small shipment should be winging its way toward the first lucky dealers. Two weeks from now, a second small shipment will reportedly arrive, and then, soon after you read this, a big shipment in mid to late June. Although running behind, we finally seem to be on the threshold of seeing the long lost *Falcon* make its retail debut in the U.S.

Atari TT Back in Production

Atari may have more products to sell as well. The *TT*, which has all but disappeared from dealer shelves after a manufacturing hiatus, is apparently going back into production. Certainly, this is good news for both the existing *TT* users who now have more reason to believe that their machine will not be orphaned in the near future. *Atari Works* deliveries should be arriving by late June or early July (per Bob Brodie's 7 May Genie RTC) and will come with *SpeedoGDOS* and 14 fonts. Additionally, *SpeedoGDOS* will be offered directly by COMPO and Oregon Research, each of which has been licensed by Atari to distribute it.

Where does all this leave us? First, the products appear to be coming. There are some delays in the software that is supposed to be bundled with the Falcon, but any movement induces hope. If you are one of the lucky early purchasers, you'll probably get your full software packages a bit later down the line. If you are like the rest of us, you should (lots of optimism here) get your *Falcon* and software at the same time.

OK, second, where to get them? Bob Brodie told me that at this time there are over 100 storefronts signed-on to carry the Falcon and other Atari products. Most of these are, admittedly, music stores, the industry in which Atari has found a niche. It's going to take some time to attract new computer dealerships; there must be product to sell and a significant demand for the computers. Right now, we are still lacking both. Many potential buyers appear to be assuming a "wait and see" stance, both in terms of product delivery and then to see the viability of the computer and its support network. These are valid concerns as there have been many promises in the past; but this time we appear to be getting a little closer.

Dealership Agreements Enforced

Atari has been getting very hard-core as far as sticking to the terms of the dealership agreements, and this has created a fair amount of resentment within the community. A case in point is the Connecticut AtariFest, which should be going on as you read this. Computer Studio from Asheville, N.C. was denied permission to sell the Falcon at the show because it is out of their area. At the time of this announcement, there was a major backlash on the on-line networks. Bob Brodie pointed out that there is precedent for this, i.e., at the Glendale shows, only "local" dealers were allowed to sell Atari computers (save 8-bit). Of course, there are a number of dealers local to Glendale but few in the northeast. It now appears that there may be attendance by Atari Dealers from the northeast, whether new ones or beefed up existing ones. I'll let you know how successful this was next month, as I plan on attending the show. Atari's intention, as best we can tell, is to try to provide incentive for new dealers by ensuring that they have "exclusive" rights to their turf, at least temporarily. It is a theory that has been used by Apple in regards the *Macintosh* line, albeit with moderate success. Authorized Macintosh dealers are NOT allowed to sell mail order, which is unfortunate for some consumers because of the large discrepancy in price between the big market areas and the small ones. There are, however, dealers, and that appears to be what Atari is trying to create. This won't make the existing "volume" dealers very happy; but, hopefully, they can hang on anyway. Bob Brodie was very clear in his 7 May RTC on GEnie that dealerships who sell mail order without authorization run the risk of losing their Atari sales authorization and company support.

"Criticism" NOT Welcome

It has been interesting to note the controversy regarding "attacks" on Atari corporate policy, both in (unnamed) on-line magazines and also in printed media, such as you hold in your hands. If you have ever read *MacUser* magazine, you would note that such criticism is hardly exclusive to the Atari world. In fact, some of their editorials suggest someone should

rip John Scully from his position as CEO and replace him with someone with "vision." I particularly liked the one where the writer was complaining that Apple's CEO had forgotten his roots, and labeled him the functional equivalent of Ebenezer Scrooge a la "The Christmas Carol."

Does this sound familiar? How could Atari users attack Atari corporate policy??! There has been a lot of bad blood that has come out of this controversy, some well deserved, some merely thrown upon any potential antagonist. Until the market stabilizes, and some ray of sunshine appears, this is likely to continue. My suggestion: Atari must become *credible*. That means tell the truth up front, the whole truth, and nothing but the truth. There have been a lot of restrictions on what could be said by Atari reps, if they were even cut in on what was going on; and that always comes out in the end. The user base knows when the product is here–we can see it, and the printed or electronic word is usually permanent (save for politicians) serving as the reminder of promises kept or broken. Forthrightness is a virtue, and, hopefully, we will see it become an Atari standard. On the day that happens, I will cease my tendency toward pessimism and join the local optimists club!

Pirates Beware

If you haven't seen the two IAAD (Independent Association of Atari Developers) reports on piracy, these are must read articles. The IAAD did a very in-depth and detailed review of many reputed pirate boards, and came up with pirate file listings, numbers of downloads, sysops, user ID's, and other pieces of data the likes of which I have never seen. The scope of the problem, evidenced by the number of files available, and the downloads that occurred, tell two conflicting stories. First, there are, apparently, a lot of developers who are not receiving the royalties their work entitles them to; and second, there are still a lot of Atari owners out there, very cheap, no doubt, but still in the picture. There must be a means of resolving this. I'd recommend something like a "piracy amnesty" program–you turn in your pirate version and, for a deeply discounted price, you get a legitimate copy with manual, etc. Of course, this won't attract all pirates, but any recourse inviting a return to legitimacy could be helpful. Pirates beware; the IAAD is looking for you!

Tidbits

The Dusseldorf show is indeed cancelled, at least as it was formerly known. There may be a non-Atari exclusive event in its stead. Stand by for details as we get them.

Those of you who use GEnie may have noticed its slowness in the evening hours and, of course, Saturday and Sunday nights. Apparently, it is a victim of its own success, as there are, apparently, a lot of ex-Prodigy users making the switch.

Last minute news: Oregon Research Associates just announced their own Data Compression program called *DATAlite 2*. This program appears to be in direct competition with *Data Diet* and other file compression programs, and operates in the background, transparently, nearly doubling the amount of data you can store on your hard drive or floppy.

Next Month

In the July issue, the "Creative Solutions" column will return with a story on the exclusive use of Atari ST computers by a large franchised hobby store chain. We also will (hopefully) have some good things to report from the Connecticut AtariFest. There should be a lot of reviews to round it out, and, of course, my monthly rambling. Please join us then, and, of course, if you have something enlightening you'd like to pass along to the community, send it my way! See you in July!

GOOD NEWS AND BAD NEWS

Atari Industry News and Announcements

New Products

Elan Software presents *SOLUTIONS*

The new Professional Algebraic Mathematical Software for the Atari ST/TT, *Solutions*, will save valuable time for engineers, students and anyone working with mathematics by taking care of all the complex computations. The program will do quick work of calculations involving real or complex numbers, matrices, vectors, statistics, unit conversions, bit manipulations and much more. Besides being fully interactive, *Solutions* programming language, which is simple to learn, provides even more power for solving complex problems. At last, there is a much quicker and more efficient alternative to writing and debugging special mathematical code in FORTRAN, BASIC or C.

The software fully supports algebraic computations: variable names may be used instead of numbers. With *Solutions* you can instantly compute the derivative of any equation. The answer is given directly or one step at a time so you see all the intermediate results. You can also plot or manipulate any equation. There are 750 built-in functions to which you can add your own user-defined functions with their inverse and derivative if necessary. A user-defined function can be used just like the built-in ones.

Solutions can solve many more problems that routinely plague those who work with mathematics. The intelligent unit conversion feature comes with 120 built-in units to which you can add any number of user-defined units. A wide range of binary, bit, list and string manipulation functions is also included. You can save your user function libraries and your current work to disk. The user can export any graphic or numerical result in a format that is read by the vast majority of spreadsheet and scientific graphing packages.

Solutions runs on any Atari ST or TT with one MB of RAM and a monochrome or color monitor. It comes on a 720K floppy disk. The SLM-804 laser printer, any Epson FX-80 compatible printer, as well as a hard-disk are supported but optional.

The software and the 200-page well-written manual with index and glossary are completely in English. The suggested retail price is US $99.95 (CDN $119.95). *Solutions* for the Atari is available in French for the French and French-Canadian market. Dealer inquiries welcome. *Solutions* will be available for the Windows, OS/2 and Macintosh environment during summer 1993.

You may reach Elan Software by calling collect at (418) 682-0191 or by writing to: Elan Software, 550 Charest Est, PO Box 30232, Qubec, QC, Canada G1K 8Y2. E-mail:

GEnie (P.DUBE),
CompuServe (70471,3676), or
Internet (70471.3676@compuserve.com).

DMC Distributing Fonts for Calamus and Outline Art 3.0

DMC Publishing is pleased to announce the availability of 341 Berthold fonts for use with all versions of *Calamus* and the newly upgraded *Outline Art 3.0*. These original, copyrighted fonts are packaged in 45 families. Pricing is based on the number of typefaces in the font family.

1 typeface	$39.95 US	49.95 CDN
2 typefaces	79.95 US	99.95 CDN
3 typefaces	119.95 US	139.95 CDN
4 typefaces	149.95 US	179.95 CDN
5-7 typefaces	179.95 US	209.95 CDN

Note: Sample previews of all of the original typefaces are available for downloading in our GEnie library 30 in CVG file format.

For further information or to order by telephone using your VISA or Mastercard please call DMC Publishing at VOICE 416-479-1880 or FAX 416-479-1882. You may also order by email: GEnie (ISD), CompuServe (76004,2246), Delphi (ISDMARKETING). Payment may also be made by check or money order and mailed to the following address: DMC Publishing, 2800 John Street, Suite 10, Markham, Ontario, Canada L3R 0E2.

Marcel Word Processor

Marcel Software of California is pleased to announce the distribution of its *Marcel Word Processor* to the U.S. and Canada. *Marcel Word Processor* is a GEM-based, user-friendly, budget-priced program especially suited for writers, authors, journalists, and students--and for anyone who likes to write. *Marcel* has loads of features, like programmable function keys, auto-reformatting, instant-access writer's note pad (saved with file, but not printed or exported), easy accented-letter entry, easy keyboard selection of clauses, sentences, and paragraphs, word erase, and hundreds of other features, many not found in other word processors.

Marcel can export in the following formats: RTF, *1st-Word*, and 7- and 8-bit ASCII. With RTF (Rich Text Format), files can be exchanged with numerous programs in the Macintosh and DOS worlds, and with such programs as *Calligrapher* and the new *AtariWorks* from Atari Corp. *1st-Word* format may be used with programs like *Pagestream*. Marcel can read RTF, *1st-Word*, *WordWriter*, *ST-Writer*, *WordPerfect 4.1*, and several other file formats.

Marcel runs on the full range of Atari 680x0 machines, from 520ST all the way up to the new Falcon. It is fully MultiTOS-compatible. Printer support includes Epson and compatibles, Atari Laser, Citizen, HP DeskJet and LaserJet, and IBM. Users can create their own printer drivers by editing a simple file.

In April, *Marcel* released Ver 2.1, which provides support for the Atari Laser Printer and adds several new features

to the spell checker. (Ver 2.1 is available as a free update to all 2.0 customers. To receive the upgrade, the 2.0 customer only needs to mail in the 2.0 diskette and the 2.1 update will be shipped back in exchange.)

Marcel Word Processor, $49.95, from Marcel, 318 Mendocino Av. D51, Santa Rosa CA 95401.

CodeHead Technologies Announces *DigiTape*

Direct-to-disk digital recording for the Falcon030! *DigiTape* and Atari's new *Falcon030* computer combine to give you a complete professional-quality home recording system.

DigiTape is an 8-track "simulated tape deck," with a modular plug-in/plug-out mixing board and four modular digital effect racks. It uses the amazing DSP (Digital Signal Processor) chip built into the Falcon to give you direct-to-disk digital recording that equals or surpasses conventional analog tape decks.

There are two versions of *DigiTape*; here's a brief description of the features of each version:

DigiTape Light – Suggested retail: US $149.

- Mixing board with up to eight tracks (two for record, up to six for simultaneous replay)
- Sampling frequency selectable between 8 to 50 kHz in 16-bit stereo.
- Modular digital effects such as reverb, echo, flanger, vibrato, distortion and more. (Developer's documentation available for writing DSP effects modules).
- Recording time with 55MB hard disk space: approx. 3 min 30 sec with 6 tracks at 25 kHz.
- Frequency analyzer (for tuning guitars and other instruments).
- Online digital effect processor: 2 x 2 possible chained stereo effect combinations.
- All connections are through the Falcon's standard microphone-in and headphone-out jacks.

DigiTape – Suggested retail: US $199.
All of the features of *DigiTape Light*, plus:

- Virtual track management of up to 64 tracks.
- Burn in of digital effects ("print" effects on recorded tracks).
- Digital remix to hard disk: up to six tracks into two tracks with full digital effect mixing and stereo placement control.
- Cut, copy, and paste functions--both destructive and nondestructive.
- Sample zoom function for accurate editing and "cutting."

For more information, contact: CodeHead Technologies, P.O. Box 74090, Los Angeles, CA 90004. Phone: 213-386-5735 (Mon-Fri 9am-1pm Pacific Time); FAX: 213-386-5789; BBS: 213-461-2095.

Compo Software Markets *Speedo Starter Kit*

Speedo(TM) is a new typeface format, developed by Bitstream, that will revolutionize the way you work and the quality of your documents. You may have used bitmap fonts in your applications. Bitmap fonts are only available in a few sizes, and are often crudely scaled and reproduced (resulting in "jaggies"). Bitmap fonts also use separate files for screen and printer fonts, and, thus, occasionally vary between what you see on screen and what is printed, ruining the desired "What You See Is What You Get" (WYSIWYG).

These problems are of the past. *Speedo* fonts can be scaled to any size, and are always scaled at the highest quality for both screen and printer. WYSIWYG is maintained because *Speedo* does its work with a single font file.

You may have used outline fonts in your applications. Speedo sets a new standard for outline fonts. It uses Type 1 hinting to increase resolution and accuracy for sharper quality at low resolutions. *Speedo* fonts also include extensive kerning data, with an average of 300-500 kerning pairs per font, for perfect character spacing.

There are over 1000 *Speedo* fonts, from traditional to original designs. *SpeedoGDOS*(TM) is the type manager that brings this technology to your Atari. *SpeedoGDOS* uses dynamic font caching to scale *Speedo* fonts within a limited amount of memory. It also allows you to easily add fonts to your system, change printer drivers, and more.

COMPO's *Speedo Starter Kit* includes everything you need to add *Speedo* to your system, including *SpeedoGDOS*, an assortment of printer drivers, and 20 outline fonts. It is compatible with all applications that use GDOS, including word processors, desktop publishers, graphics applications, and others. Some applications support *Speedo* fonts directly, such as *That's Write 3*.

Printer drivers are provided for Canon Bubblejet, HP Deskjet, HP Laserjet, HP Paintjet, SLM series laser printers, 9-pin dot matrix, and 24-pin dot matrix (including NEC-compatible 360x360 dpi) printers. Additionally, other drivers are included with specific third party applications, such as Toad Computer's *STraight FAX!*

The *Speedo Starter Kit* is available now from COMPO Software for $59.95. Additional font packs are also available, as are individual fonts from the Bitstream Typeface Library.

To order or request more information, contact: COMPO Software Corp., 104 Esplanade Avenue Suite 121, Pacifica CA 94044 USA. Tel: 415-355-0862; Fax: 415-355-0869. Electronic mail: GEnie (COMPO).

Lexicor Software Europe to Export the *Nova Video Card* to the U.S.

Yat Siu of Lexicor Software Corporation Europe is glad to announce that they have acquired U.S. distribution rights to the NOVA Video Card. The Nova Card comes in five different versions. Lexicor Software Products has been tested with *XENOMORPH-3D, Cyber Colour, Prism Paint, Chronos-3D, Genesis, Render 24*, and other programs still in review. Because the NOVA Video Card has its own VDI driver, most Atari applications that are written cleanly should work just fine.

Lexicor users and buyers of Lexicor software bundles will receive special pricing. (Lexicor users discount prices

listed below in parentheses.) The following NOVA cards are available:

NOVA Mega 32K - 32,768 colors for any Mega ST BUS, $360 ($300).

Nova Mega 16M – 16.7 million colors for your Mega ST BUS, $490 ($400).

Nova VME 32K – 32,768 colors for any Mega STE or TT VME, $560 ($429).

Nova VME 16M – 16.7 million colors for any Mega STE or TT VME, $699 ($529).

Super NOVA – Excellence and brilliance! Requires a VME Bus Mega STE or TT, $1,199 ($999).

If you own an ST or a regular STE (eg.1040, 520), then, with a special adaptor, you can connect the Mega BUS versions on your ST or STE. Price of the adaptor will be announced at a later time. Prices listed do not include shipping and all prices are subject to change.

NOVA Video Card specifications for all cards except the Super Nova include resolutions to 1024*768 at 72HZ in up to 256 colors. The cards come with ONE Megabyte of DRAM and have automatic Resolution Switching. At lower resolutions, color display availability increases accordingly to 16.7 Million colors at 640*400.

The SUPERNOVA has a maximum rating of 135 MHZ with 16.7 million colors at 800*600, 32k colors at 1024*768, and 256 colors at 1280*1024. The Super NOVA uses TWO Megabytes of VRAM for fastest possible performance.

These cards are being imported from Lexicor Europe and stock may be limited. Purchases may be are arranged through Lexicor U.S.A.

Product Upgrades/Updates

***Informer II* v3.0 Shipping**

Richard Skraly of Soft-Aware, Unlimited has announced the release of *Informer II* v3.0 for the Atari ST and PC platforms. The ST upgrade, almost two years in the waiting, is primarily a bug fix and compatibility upgrade that allows direct file transfers between the PC and ST versions without file conversion. The PC version is significantly enhanced over the Atari ST version, with the latter to incorporate the PC version's enhancements upon release of the next Atari version, v3.10. The release of *Informer II* ST v3.10 is expected prior to June, 1993.

For further information contact: Soft-Aware, Unlimited, 334 "B" North Euclid Ave, Upland, Ca 91786-6130. Phone: 909-982-8409; Fax 909-985-2348.

Baggetta Ware Updates

The Eliemouse Complementary Coloring Book

Version 7 of *The Eliemouse Complimentary Coloring Book* is now shipping. This version is multi-lingual, allowing hours of fun in English, Spanish or French for children ages four and up. New features include: Music added to color dis-

play, color shifting, pattern fills, online games, slide show feature, and many more.

The *Eliemouse Complimentary Coloring Book* communicates with your child during the coloring activity. The program is filled with compliments and educational fun for your child. A package, including the Main program and six starter pictures, 140 compressed pictures, three games, six bonus low resolution color screens, a manual and souvenir Eliemouse Pencil retails at $45.00. Upgrades of older versions are $25.00 plus $1.00 shipping and handling (original disks must be returned).

To order or get further information contact: Baggetta Ware, P.O Box 759, Agawam, MA 01001-0759.

Industry Update

Dieter Fiebelkorn, author of the *GEM-View* graphics file viewer utility program, announced that *GEM-View* will remain as a shareware program and that exclusive marketing rights to *GEM-View* have been granted to *no* U.S. company. Both CyberCube and Lexicor had posted notices on the major online services announcing that they would be handling the distribution of *GEM-View* with their various software packages and that this would fulfill the shareware fee requirements. Mr. Fiebelkorn has replied that ALL copies of *GEM-View* require payment of the shareware fee direct to himself as the program is only allowed to be distributed free of charge.

Future Atari Shows

Kansas City Atarifest, June 26th and 27th

The location for the show is Stadium Inn, 7901 E 40 Hwy. Ticket prices at the door will be $5 each, with advance tickets at $4 each. For advance tickets, please send $4 per ticket to: Kansas City AtariFest, P.O. Box 1653, Lee Summit, MO 64063; if you belong to a user group, please mail a request for a user group information pack.

To make room reservations, please call 1-800-325-7901. Additionally, we are working with a local travel agent to get special airfares for the show. You may call 1-800-874-7691 to take advantage of the special fares.

For more information please leave Email as follows: GEnie (B.Welsch or B.Frazier2 or J.krzysztow); CompuServe, leave for Jeff Krzysztow (74027,707); Delphi (Bobtrow). You can also call 816-224-9021 or mail to the address listed above.

We hope you will join us to welcome the following companies; Cali-Co software, ChroMagic Software, Clear Thinking Software, The Codeheads, Compu-Seller West, D.A. Brumleve, Electronic Spinster Graphics, Fair-Dinkum Software, Gribnif Software, ICD, MegaType, MissionWare Software, Muller Automation, New Dimensions Computer Center, Oregon Research, Paper Express, S.K.Ware, Soft-Logik Publishing, Systems For Tomorrow, Taylor Ridge Books and a lot more!!

Bruce Welsch
KCAC Special Events Coordinator

Blue Ridge AtariFest, July 24th and 25th

The Blue Ridge Atari Computer Enthusiasts (BRACE) and Computer STudio invite you to participate in the Fourth Annual Blue Ridge AtariFest in beautiful Asheville, North Carolina. Show dates and times are Saturday, July 24, 10am-6pm and Sunday, July 25, Noon-5pm.

Just as in previous years, we have arranged for FREE Booth space for Atari developers!! (We're only requesting the donation of a door prize).

We can promise both developers and show-goers an energetic and exciting show with as enthusiastic a crowd of Atarians as you'll find anywhere, plus the support of Computer STudio in the mall.

We're, once again, taking over the Courtyard Shop (mall) area at Westgate Shopping Center for the show (location of Computer STudio), plus the use of vacant store spaces for seminar sessions. Seminar sessions will be 45 minutes in length, and developers are welcome to conduct a seminar on their product line or approved topic of their choice (seminar sessions are limited, so first come, first served).

This year's show dates also coincide with Asheville's annual Bele Chere street festival, when downtown Asheville is closed to vehicular traffic and becomes what must be one of the largest street fairs in the country. Westgate Shopping Center is one of the primary Park-and-Ride shuttle centers for transporting people to and from downtown, and we've arranged to have the shuttle service pick up at the front entrance of the mall and drop off at the rear entrance, so everyone taking the service from Westgate *will* walk through the AtariFest exhibition area sometime during the day. This will be a great opportunity to showcase Atari and Atari related software and peripherals, and introduce them to people who aren't already Atari owners. Bringing in *new* blood is the key to the growth of this platform, and this will be our opportunity to begin that process with a captive audience.

Additional discussions of the show, as well as confirmations of your participation, are welcome in GEnie Mail and in the Blue Ridge AtariFest topic 13 in Category 11 on GEnie. Hoping to hear from you soon. Happy Atari Computing. It's happening in Asheville!

For additional information, please contact: Sheldon Winick, Computer Studio, Westgate Shopping Center, 40 Westgate Shopping Center, 40 Westgate Parkway, Suite D, Asheville, NC 28806. 704-251-0201; GEnie (S.WINICK). You can also contact Cliff Allen, Show Coordinator, 704-258-3758; Email on GEnie (C.ALLEN17) or Internet (CALLEN@UNCA.EDU).

The Mid-Indiana AtariFest V5, July 31st

The Mid-Indiana Atari ST Users proudly announce our fifth annual AtariFest to be held on Saturday, July 31st, 1993 from 10:00 am until 5:00 pm! MIST AtariFest V will continue the tradition of being one of the best "one day" shows in the nation at our new location in the Best Western Waterfront Plaza Hotel!

MIST AtariFest V will be held at the conveniently located Best Western Waterfront Plaza Hotel, just minutes from Indianapolis International Airport. Our new meeting facility is nearly twice the size of our former location and also boasts a 150-seat auditorium. Best Western Waterfront Plaza Hotel is situated close to several major highways and near several eateries and entertainment centers. Best Western Waterfront Plaza Hotel provides complimentary transportation to and from Indianapolis International Airport.

MIST AtariFest V will be conducted with our proven method of success and will provide enjoyment for all the guests that attend. MIST AtariFest V caters to not only the novice but also to professional users. Guests are invited to attend any or all of the several seminars, which will be held throughout the day. "MIST UserGroup" memberships will be offered at a one-time special price to all guests. Open invitations are extended for Lynx and MIDIMaze competition tournaments. The top players will receive prizes. A spectacular assortment of limited edition T-shirts will be available for purchase throughout the day. Raffle prizes of all shapes, sizes and purpose will be awarded during the festivities.

Best Western Waterfront Plaza Hotel is offering special discount rates to guests of MIST AtariFest V. Guest rates start at $53 for a single and $59 for a double room. Special facilities will be provided for the handicapped, non-smoker and guests with small children. Please contact the Best Western Waterfront Plaza Hotel at (317) 299-8400 and be sure to mention MIST AtariFest V to get the special discount rates.

Admission to this proven event is still only $3. Dealers may purchase booth space in advance for $50 per table. User Groups may obtain tables at $10 each.

For more information, contact me through one of the following methods: Phone: 317-856-4260; GEnie (W.JONES43); FidoNet Mail: Bill Jones at 1:231/370.0 (The Zoo BBS 317-856-0252); InterNet/UUCP (Bill.Jones@f370.n231.z1.fidonet.org). Or by U.S. mail: ASCII, c/o Bill Jones, 6505 W Castle Ave, Indianapolis, IN 46241.

We hope to see everyone there this summer!

The Glendale Show, September 18th and 19th, 1993

The Glendale Show returns with the Southern California Atari Computer Faire, V7.0, held at the Glendale Civic Auditorium in a northern suburb of Los Angeles, California. This has been the year's largest domestic Atari event for the past several years. In addition to vendor support, numerous Southern California user groups also attend the show. Contact John King Tarpinian at the user group HACKS at (818) 246-7286 for information.

Atari Vendors/Clubs

Send announcements of your Atari products or Atari shows to the ST Editor, Steven Kiepe, 29 Polk Ct, Newport, RI 02840. Send E-Mail to GEnie: S.KIEPE. The editor reserves the right to "trim" announcements as necessary. Software or hardware for review should also be forwarded to the ST Editor as noted above. All product names are copyrights or trademarks of their respective owners and are listed for informational purposes only.

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Maybe What We Need Is a Computer That ... *Doubts!*

By: David Small

CAUTION: Freethinking article. Obvious leaps of logic which can be picked at are enclosed. However, I am a licensed "NF" personality type, to whom "logic is optional" (I am quoting). I have also added technical information to the article which is just interesting, even if the basic premise doesn't work for you.

The Next Generation

How should we build the next generation of computers?

Let's you and me sit a while on this bench and chat. Y'know ... computing technology seems "stuck."

(And you thought it was just Atari?!? Naww.)

To lay the background, let's talk about state of the art, then a different approach you might find ... interesting.

Let's Talk "Hardware"

Sure, on the hardware side, we can add memory, we can bump up the clock speed of processor chips, and we can cram zillions of transistors into small chips. But we're up against the law of physics, and diminishing returns. Look at the computer market now! Already multi-megabytes of memory are becoming inexpensive enough for consumers to buy. Processor speeds are already approaching the point of disbelief; an effectively 66 Mhz 68040 (the 040 is a clock doubler, sort of) and 66 Mhz 80486 DX-2 are for sale *now*, and the next Intel chip in the series, the "80586" (which is called "Pentium") is available ($900 for one at the moment, though, in samples; but that price will drop like a stone), which is said to be much faster than the screaming 80486/66. Motorola Faithful, hang in there, a 68060 is in the works, too.

But heck, ya want *speed*? The RISC (Reduced Instruction Set Computer—but it does each instruction incredibly fast) chips can *terrorize* a CISC (Complex Instructions that can't be run really fast) machine anyway, given enough RAM. I saw a Silicon Graphics box leave a Quadra-950 whimpering, drizzling down its leg in fear, at HackerCon.

That's the fastest hardware I've ever seen, with the exception only of pure laser-based light computing, which operates in the *billions* of Megahertz (that is NOT a typo) region, but is still a bit distant from the consumer.

You might recall the 6502 in the Atari 8-bit and Apple II machines. The 6502 is very RISC like—few instructions, but the ability to do an instruction each "machine cycle," instead of taking 50 cycles or something per instruction like a 68000 or 80486. Now, remember what awesome stuff we could do with it, at 1.79 Mhz? "Star Raiders," for instance. We could do that at 1.79 Mhz because we got a LOT out of each machine cycle, out of each 1,790,000 cycles/sec.

By the way, the 6502 did not die. Right now, the 6502 is humming along, (get this), at *16* Mhz, 9 times plus faster than the Atari 8-bit. This is breathtaking speed, folks—on an "obsolete" processor. Ho!

For instance, our twin Mac IIfx's each have *two* dedicated 6502's acting as dedicated IOP's (Input/Output Processors) to handle serial and SCSI, to take the load off the 68030. I know a modem manufacturer that uses these Rockwell 6502 parts, and they so have the computing power to drive FAX and on-the-fly compression ... typical 14.4K baud modem stuff. Those are complex algorithms and require SERIOUS horsepower. The 16 Mhz 6502 does it.

(Please, SOMEONE: Put a 16 Mhz 6502 CPU into an Atari 8-bit, with some RAM that is not forced to bog down to the old video clockrate. I know, this is not trivial, but I know it can be done. A great, logical place for that RAM is "under" the operating system, via bank select, like the 130XE; no one is expecting that to drive much video anyhow. Let me know; I'll *give* you a brand new Spectre GCR on condition that, as a Hacker, you *tell* people how to do this, and the design is decently fast. If you're not comfortable writing, I'll write it up for you. It does not have to be optimal and perfect; I often use a kludge myself. I would do this for fun, but I don't have time.)

Speed Lite

Back to computers. We're hitting speed-of-light limits here, too, folks. NOTHING goes faster than 186,232 miles per second, says Einstein, and no one has disproven that yet. (Many, many things indicate it is true; sub-atomic particles that last mere shreds of a second last much longer than they should, because time has slowed down for them; they are at relativistic speed. And it took about three seconds to bounce a signal to the moon and back, back when we were a nation with a frontier. Interestingly, however, the quantum folks are beginning to tentatively prod at faster-than-light information exchange.) Electrons move at 1/3 speed of light on a PC board, and near light speed in coaxial cable.

Since computers now do things measured in nanoseconds, one billionth of a second, I'd best tell you that one nanosecond in time represents *a foot* or so of electron travel. Since computer chips sometimes take just 15 nanoseconds to get a signal through (look on the SST GAL chips!), high speed timing is *absolutely critical*; you just have no idea

how many 50 Mhz (50 Mhz means 50 million instructions fetched and run per second) computers have been designed *and failed* on these sorts of timing hassles. There have been endless engineers pulling their hair out and trying to regrow it with Rogaine (Minoxidil), accounting for Upjohn's stock going up. Now I have some experience with our SST at high speed (46 Mhz, if you're curious, is how fast I've taken an SST; I won't tell you max speed on the Camaro; we haven't reached the statute of limitations yet.) I can only maintain 46 Mhz by artificially cooling the chips; more on that later.

Weird stuff happens at high Mhz; the electrons just can't move fast enough. Special board construction techniques have to be used to keep voltage spot-sagging from appearing, for instance, and to keep grounds at 0.0 volts, where they belong, instead of having "hotspots" that are not 0.0 volts.

Step WAY back and look at that. I'm talking about electricity, smoking along at 60,000 miles *per second*—and chips suck it up so fast, and dump it out so fast, that the power supply, physically a very conductive *sheet of copper*, cannot avoid having spots that for small fractional time sag, despite all that copper around them that is at the right voltage. And the ground, 0.0 volts, has measurable volts as the chip dumps to the ground plane until the voltage has had time enough to spread. We're still speaking of 60,000 miles *per second*, by the way. The problem is simply the *time* involved is so short that the speed doesn't matter.

To handle all this, you need multi-layer PC boards, for example; two outside layers, with signal wiring, and two inside layers, consisting simply of +5 Volt and Ground (0.0 volt), which you run ultra-wide connections to (in fact, they usually end up either as a total plate or cross-hatching the whole surface, and are *everywhere* except where a "feedthrough" hole must go from top to bottom and they can't touch it.) The SST is this way.

Anecdote: One high Mhz SST would not run with its "parts set" (all parts plugged into an SST) at high Mhz. I had hand-soldered it (and I have become good at soldering). We put all the parts into a *new* SST board that had been wave-soldered, where the whole board is dunked into a bath of molten solder, precisely as high as the board, and soldered. This is the usual production technique for batches of boards including ours. That board worked at high Mhz. Apparently, there was something about my soldering that high Mhz did not like, but it ran fine at 33 Mhz. That's an awfully fine line.

The ultra-fast IBM clone DX-2 computers are, in reality, running most of the machine at *half* the rated speed, except for the CPU chip and maybe some static cache RAM; my DX-2/50, for instance, is a 25 Mhz machine, which is far easier to design, and get FCC certified, than a true 50 Mhz machine. It is actually fairly hard to find a true 50 Mhz PC. Similarly, Atari's TT runs the CPU at 32 Mhz and everything else at 16 Mhz.

Engineers are getting grey hair with the more than 60 (true) Mhz chips coming, like Pentium (100 Mhz is discussed); the circuit boards will have to be physically smaller and denser, just to get the electrons there in time. And that means more heat is generated in a smaller space, which is a primary computer killer. I'm installing a cooling component, a Peltier Junction, in my PC tonight, plus another fan. It's an odd thing—a 1" square chunk of metal with two power leads that you plug into disk-drive power. Incredibly, like "Maxwell's Demon," voila!, one side becomes chilly, one side gets hot! (And there is a *substantial* difference in temperatures).

Cooling It

So, you put the "cold" side on your CPU chip (with some goop to help conduct heat), and let this weird thing carry off heat (transfer it, really) to the hot side and a heat sink, where your fan will carry it off. It keeps the CPU chip, which I presently *can't touch* (too hot) when the machine is running (common on DX/2 machines), down *below* room temperature.

Note: If you have a DX/2, get, at minimum, a CPU fan, better a Peltier Junction and fan. DX/2-66's burn up, the techs at our local computer warehouse/store tell me, even with those big heat sinks. And no heat sink at all is a quick way to terminate that chip.

Of course, the reason these chips are getting that hot is that the number of transistors and things in them has increased radically within roughly the same space. I could pull out the same chart you've already seen on the number of transistors in a CPU increasing every couple of years, and it's true. When the speed of light is limiting electron flow to 1 foot/nanosec, then you put your components closer together.

There has also been a lot of interest in the "gate arrays" and "programmable chips" that allow you to put the equivalent of many chips of logic onto one chip. Of course, that chip gets warm, but it fits on your PC board. Your Atari's GLUE and MCU (or MMU, the memory controller) chips are just this: a 2x3 foot PC board *full of chips* condensed into two 1" x 1" chips. Just amazing. We can pack an incredible amount of circuitry into just one chip (and it's being done all the time), and mount it in a small space. But that space will get hot.

Memory

The speed and cost of computer memory, which has been pretty much the traditional limiting factor in computer machinery, is improving rapidly. We ship a lot of SST's with 70 nanosecond memory chips, which is high performance speed; Apple, and IBM clones now often recommend 70 or 60 nanosecond memory chips on their fastest boxes. I would hate to tell you what the Atari 8-bits used in speed. ST's commonly use 120 ns. chips. And as for size, everyone and his dog has 8 megabyte PC-clones; since the 4-meg SIMMS are coming down in price, they're becoming 32 megabyte clones. That is one BIG load of memory.

(TT Tip: GESoft makes a fine TT RAM board that accepts "page mode" (e.g., "cheap") 1 meg SIMMs. It accepts 4 meg SIMMS, too, in its 8 SIMM socket slots (which I stuffed 8 SST SIMMS into). I have one GESoft board

stocked with 8 megs of TT RAM in one TT here, and it has never once fouled up. The cost is extremely low compared to Atari's 16 megabyte "nybble-mode" (e.g., "expensive") RAM board. The difference in chip technology means a BIG dollar difference. (Talk to Dave Troy at Toad Computers; he stocks 'em. So do other outfits I've seen; I got mine from Dave, is all.)

70 and 80 nanosecond RAM chips are the 55 MPH of technology, though, as are "only" 1 megabyte [one million characters, that's about 2 fullsize paperback books!] SIMMS. 4 meg SIMMS are already being bought (ask Sandy); 16 Meg SIMMS if you have a mighty high limit on your Visa/Mastercard. So the density of memory is going up.

[Sigh. I remember when 16,000 character RAM boards were $200. I got into this "Atari" world then, in 1980.]

BUT ... in my "check it out" collection are both 53 nanosecond and 40 nanosecond (!!!) 1-megabyte memory SIMMS, *that work on the SST.* (Although not at the speed I would expect; you can't set a very low number of wait states with them. There is a minor impedance problem, I believe, that keeps them from working at their full potential, but these things are solvable given the chip specs. They'll certainly act okay if you run them like 70 ns chips, but our 74AS245 line drivers get very hot, indicating "ringing," which means an impedance mismatch.)

The other problem is finding test equipment that will not skew the picture of what's really going on. This is not trivial. To give you an idea of how touchy this is, once I touched my (very good rated) oscilloscope probe to the CAS line on a 520 ST's memory expansion—and the machine crashed, just by being touched by that little capacitance. (Scary!)

I remember an AT&T tech showing me a board and saying his year's work was *one wire*, which ran directly across the board, which replaced a trace on the boards that had to wind and twist through chips. Turns out that trace was too long and slowed timing enough to crash the board intermittently. A straight wire was the solution.

Hardware Summary

So, we have processor speeds approaching what we can put on a board ... we have memory speeds approaching zero, which would be perfect (look, 40 nanoseconds is usually considered a low speed STATIC RAM, and extraordinary DRAM; 20 ns is usual speed static) ... we have assembly designs that pack more components into less space, like surface mount (which I believe IBM developed, but correct me if I am wrong). But there is a speed of light *limit*, a zero access time *limit*, a board that is packed full of components *limit*. What to do?

Let's Talk Software

Nor are we doing much better on the software side to get more efficiency. Let's skip the "language loyalty tests." Big, clunky, slow programs are the *order of the day*; you *have* to run 50 Mhz ultra-fast hardware just for them to be tolerable. Certainly, compiler design hasn't changed much; there haven't been earth-shattering breakthroughs.

Assembly language coding, as usual, isn't very easy, but gives the fastest, most tuned results; problem is, higher level (e.g., annoying) languages offer the programmer a bargain: get more of the program done in exchange for slower speed and less control for the same amount of time. So far, I haven't given in to this, but most others have. So, yes, our spreadsheets are bigger, but the *design hasn't changed.* I can edit a larger document. So? The database can be larger. Yawn. And so forth.

Nothing *new*. See what I mean? Lots of talk about "objects." No one can seem to tell me what an "object" is! I kid you not. If you want to see the funniest thing in the world, get three Computer Sci grads in a room, and ask them, "What is an object?" Be sure to remove all sharp objects from the room or you'll have two bodies.

I simply don't see anything new and revolutionary. There are clones of every new idea, but not the sort of radically new stuff we need: a quantum leap.

Something New

Now, I am not asking you to take another step forward into a jungle of bewilderment. I am asking you to pause, take a deep breath, and step back for a moment to get perspective. Please remember the legendary quote: "A fanatic is someone who re-doubles his efforts ... after he has lost his way."

Look! We've all pretty well beaten the present ideas in computing *to death*. There just isn't that much more performance that can be squeezed out of present hardware and software. That's it. 55 MPH. Dead end.

What's needed is a *whole new approach*, for us to backtrack and find an entirely new trail. Hence, let me, humbly as ever :-), submit some thoughts on said "new approach." Let's go through a bit of metaphysics. Don't turn the page; metaphysics is where the "bleeding edge" is at! The quantum physics science people use metaphysics and Buddhism all the time to describe the world of electrons, and our computators (a word I've invented combining "computers" with "pataters," consumed during computing) use quantum principles to run in their chips.

I Think ...

Remember "Cogito Ergo Sum"? It's the common (mis)translation of, "I think, therefore, I am." There is a great truth when it is translated more correctly. This saying comes from philosophy, from someone trying to determine what could be *proven to exist* in the world. Does the universe really exist? Or is it all, well, "a figment of my imagination?" When you get right down to it, there's *no way* of proving *anything exists*, just as someone using hallucinogens cannot tell if what he is seeing is real or just a dream.

However, we do know *one thing for sure*. (That is as far as philosophy has gotten in 4,000 years.) *We exist*. How do we know? Because, at the very basic level, we *know* because we can *doubt* our existence. *We know we are doubting*—hence, we must exist, in order to be doing this doubting. Whew, the relief it gives me.

Proving that other things exist hasn't happened, though. (I'd like to be the first to tell you that everything you know is just a figment of your vast imagination. *grin*)

Doubt is the key! The *real* meaning of Cogito Ergo Sum is "I doubt, therefore, I am." It means, we don't know much, but *we know we are doubting*, and, hence, *we exist*. That, to me, is the new trail to explore. Let's follow along.

The Doubt Machine

Now imagine, if you will, a computer that can *doubt*, instead of what we have, which are computers that mindlessly (we have all seen the "mindless" part, especially when things go wrong) follow a step-by-step procedure called a "program," just like a cookbook.

I believe this might be the next generation of computing thought and research. (I am tossing it out vigorously to seed in your minds, because, first, I can't carry it any farther than a strong gut-feeling that it's correct and new—I don't have time now—and second, I believe in the freedom of information exchange, which is The Hacker Ethic. You are welcome to make a fortune on this idea.)

Can't imagine a computer that *doubts*? Mental images of it scanning/examining your program for bugs? No, no, NO! That's the old stuff, just optimizing step-by-step program development. Instead, step FARTHER back to something totally new. Let me give you a sample.

Sculpting a Computer

Let me tell you the two ways to construct something. Let's say ... a statue, or any other molded thing.

The first is to build the statue by adding on to it. Use plaster of paris or modeling clay, and build the statue, from the ground up. Plan ahead. Leave enough structural support for the finer features. Don't "fire" the clay until you are done.

You might think of this as analogous to the present approach to computing, which is giving directions (via a "program") to build a structure—heck, that's all computers are doing.

The Other Way

But there's another way, a way that until only recently has been closed to computer creators. We can *also* create, and define, a statue by starting with a large block of clay, and whittling away at it until we get it down to the proper shape. In short, we begin with infinity, and whittle it down to our desired shape.

How many computer programs do you know work this way? How many programs have you seen which tell the computer what NOT to do, and thus define what needs to be done?

Don't just say that defining what the computer SHOULD do is enough to define what it should NOT do. Any programmer can tell you reams of stories of the computer going out of control, executing data as instructions, crashing, and whatnot. The ideal is unreachable by present technology.

Look at how many, many advantages a computer program written with, well, NOT technology would have. The stream of computer execution COULD NOT take a path that is unexpected—you chipped that possibility path right out when you sculpted.

This hasn't been possible until these past few years. Computer power was so limited that the computer was hard pressed to *just follow instructions*, much less look for things NOT to do, sort of fumble its way, somehow I cannot visualize, down a path restricted by NOTs. (I do have a vague amorphous feeling that this is the *true* method to do parallel processing, which is the only expansion direction left, and does not mix well with current programming technology, step-at-a-time stuff, by its nature. There is just ... something ... about any number of processors funneling through a series of NOT-walls, unable to foul up, that I like at an intuitive level.) (Of course, I could just be reacting to my loathing of Mac programs that misbehave, which I must then fix.)

So I wonder if now isn't the time to begin looking at a new approach to computing, a way of defining a program by telling the computer what NOT to do.

Let me present my evidence in my defense, Your Honors. This is how *human beings* learn. You don't program people! (Any parent knows this; I have three kids). They pretty much program themselves, and hey, hot damn!, *that's what we're looking for!* For example, as a child, you learn Not to touch a hot stove. You learn Not to play with matches. The tool that sculpts the human mind is, well, pain, be it direct, applied by parents via hand, or whatever. You learn very much what Not to do, and a little bit what To do (usually under resistance).

Of course, in this approach, you end up with something far different than some mindless slave. You might end up with a computer, that, say, is absolutely determined to stay up at night and read the ending to a book, and doesn't care a hoot about multiplication tables. (Gee, I wonder how I guessed that one.) But it could be that is precisely what we need. Computers could be taught, and learn, the same way. (Leading edge neural networks are fumbling towards this.)

Interesting Sideline

This is also how our government works, and also how it does not work. Interestingly, our Bill of Rights is loaded full of things the government is Not allowed to do. Our government system is set up with three segments that keep telling the other what can Not be done. And as a nation, we've really done pretty well, compared to other systems of government. In other words, a "Not" oriented system of rules (e.g., a program) has been user friendly.

In fact, our government only seems to get into trouble when it starts *actually doing something*, particularly the recent attacks on the Bill of Rights and thus Constitutional Freedoms (for instance, the Steve Jackson case, the Phrack Newsletter case, and others I am hesitant to discuss publicly because I'm involved. Contact EFF, and you should know what EFF is!)

Summary

This ends my thinking on this thought. I sense that there is much to be explored here, ideas to be had, processes to determine, programs to write. A new programming language, dedicated to telling the computer what Not to do.

Imagine ... a computer that can doubt. Imagine a computer program that just tells the computer what not to do. And I believe that when we finally achieve that, we'll have taken the second step towards a computer that can think.

I really hope you've enjoyed this, and now it's time to return you to the usual trail.

—

Dave Small

P.S.

I thought I'd mention that the Gadgets phone line, which has been sporadic for the last few months, is now up normal business hours; Wendy is now doing that task. She's quite good at all and a pleasure to work with. She's part of our rebooting Gadgets after 1992 and Eric.

Since she's tackling the phones, we are now catching up on all the stuff we were falling behind on.

Thanks for being patient with us while we got new things going!

★ ★ ★ ★ ★

Power Software for your Atari ST/STe/TT/Falcon030

New

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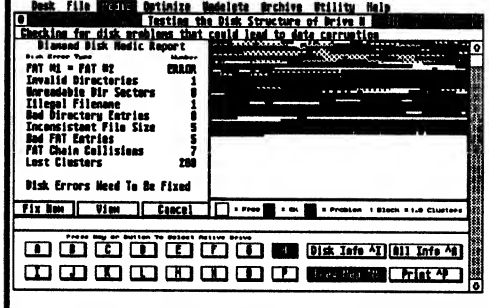

- Analyzes your disk for critical errors that may lead to data corruption.
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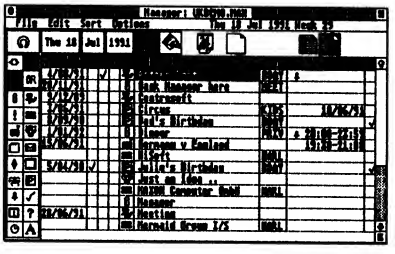

Sort your notes by any of their attributes, print them(over a range of dates and times, one note per page, with headers and footers) or view them in many ways (by day, week, month, year).

A note can have any number of dates assigned to it. Each entry can tagged with an alarm which will sound at the chosen date and time, giving you warning of an important meeting or other event. Notes can be repeated every day, month, year and other intervals and a note may be automatically moved forward to the next day if you have not marked it as complete.

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Atari in the STicks
Henry K. van Eyken

"That's Write 2" in Concert

(Multitasking Without MultiTOS)

School days. School days.
Dear old Golden Rule days.
Reading and writing and 'rithmetic
taught to the tune of a hick'ry stick.
She was my queen in calico.
I was her barefoot, bashful beau.
She wrote on my slate, "I love you so."
when we were a couple of kids.
– Example of multitasking in precomputate society

Ah, those proverbial three Rs! They make us habitually overlook what should be another fundamental of formal education: drawing. Proudly literate we are, but also sadly impictate.

When I was a bashful kid, time slots for serious drawing were few and far between. I imagine it was the same for many. Is it a surprise, then, that in writing we do not ordinarily choose to sketch whenever a picture is worth so much more than words? The very writing paper we use comes with surfaces coated to favor pen over pencil! Indeed, "impictacy" is of such small concern, it can't even be found in our dictionaries.

Students able to visualize do better at science than those who aren't. Visualization is invaluable in teaching and learning, and in life after school. The very word "science" means "seeing." Science entails having insights in relationships and processes that can't be seen and, typically, notes on science do contain pictures-although often too few, and usually rendered in hands that betray widespread impictacy. They are abstractions mainly-diagrams, graphs, and symbols. However crippled they may be, though, they are still effective messengers.

Superior communication demands more than a tool for arranging words. It must enable us to enhance our writing with sketches, graphs, diagrams, and symbols and formulaic expressions. And not only for science writing. Of the two wordprocessors most commonly used by Atarists, I favor *1st Word Plus (FWP)* over *WordWriter* chiefly for that reason. *FWP* allows us to import pictures in .IMG format. Unless one prepares a plan to take care of graphics and text in separate sessions, as is commonly done when efficiency is at a premium, this calls for a clumsy process-too clumsy, really, to be acceptable in a computent society.

Typically, I would exit *FWP* and load *DEGAS Elite* into RAM to make a diagram. Then I would replace the drawing program by *DEGASNAP* so that I can put my diagram in a GEM window and call on *SNAPSHOT.ACC*. With that accessory I would lasso the part of a DEGAS screen that is to be filed in .IMG format. Then I would exchange *DEGASNAP* for *FWP* and import the picture. A real pain, all this, and an effective extinguisher of the creative fire.

My first move toward a solution was to get an STe with extra SIMMs for a big RAM disk. Having various programs in RAM cuts down on that insufferable spinning of drives. It was heaven at first, but it did not eliminate any of the numerous steps and the upshot is that my ambition to illustrate written work has waned badly. What I really need is a multitasking system so I may sketch or graph in one window and then pipe the work straight into a wordprocessor's window.

I did try *MultiGEM*, but it offered little help–not to me, anyway. Ever try it with *FWP* and *DEGAS* ?

DTPaint

The ST can multitask after a fashion. A GEM application can share the screen with accessories, and communication among them is possible. With a wordprocessor as the principal program, I needed a drawing program available as an accessory. There is at least one–*DTPaint*. I bought a copy for less than $40, an amount that wouldn't break the bank in case it proved to be a dud.

A better name for *DTPaint* would have been "DT Draw" because it works in monochrome only. An advert by Rimik Enterprises is a slight irritant at boot-up. The manual is mercifully short, eight pages, but also somewhat incomplete. Otherwise, the short of it is that *DT Paint* works. The accessory has been designed for editing images already on hand as .PI3, .PC3 or .MAC files, but one can draw freehand or with selected tools to make diagrams composed of boxes, circles, or what have you. Tools include a choice of line patterns, bezier curves, brush, airbrush, floodfill, text (standard or graphic, the latter requiring-curses!–GDOS or the like), magnifier, jack knife for copying irregular sections of an image, black-white reversal, image flip, and a cropping and padding tool. One can dump the desired part of the image as an .IMG file ready for importing it into the wordprocessor.

The accessory does take some getting used to, mainly for checking things out beforehand to avoid unwanted interference during regular use. But it is a step forward for the spontaneous writer without other means of multitasking. Let us hope for an improved

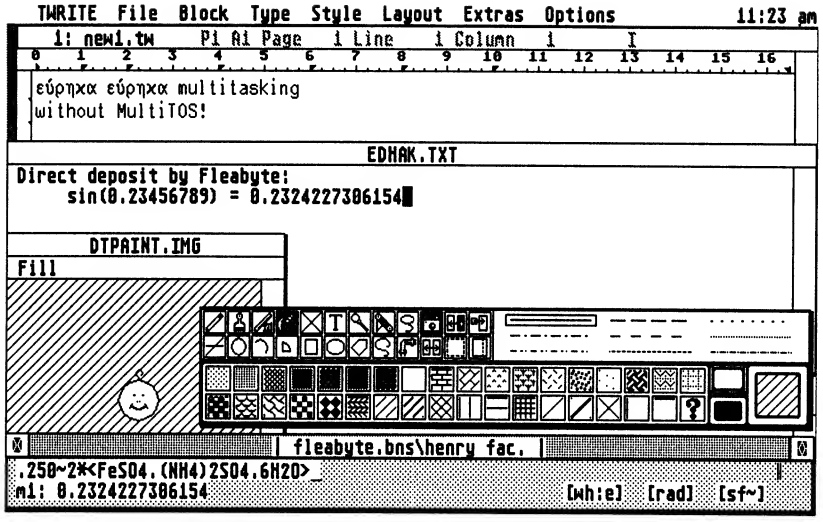

Fig. 1–**That's Write in Concert**. Trouble–free multitasking is possible with a drawing and a calculator accessory. *Fleabyte's* output (an expression or only an answer) goes automatically to the program first activated–the *EdHak* accessory in this instance. *DTPaint's* output is dumped as an .IMG file available for import by *TW2*.

version or, better still, let's hope that simple pipelining provisions in *MultiTOS* will permit widespread, efficient cooperation among programs.

In Praise of 1st Word Plus

FWP is still a popular word processor and rightly so. It is simple, it is good, and it has stood the test of a lot of time. Yet, there are factors that made me look for a replacement. For one, I do like to have a choice of fonts, especially Greek characters along with a wide variety of symbols. Two: I want to be able to create and use whatever unanticipated symbols my writing calls for. Three: my printer's font has subscripts that make it hard to distinguish between 2, 3 and 8, and that drives my students bananas, especially on exams. (I use a RolandDG PR-1011, which is a Panasonic with Canadian citizenship.) The problem can be overcome with graphic fonts.

There is another wish, but I expect it to remain unfulfilled for some time to come. To appreciate it, try typing a chemical formula like that of Mohr's Salt, FeSO4.(NH4)2SO4.6H2O, in which all digits but those after a dot should be subscripted. Now do quickly 20 or 30 different chemical formulas! One is forever deciding whether to type formulas or copy bits and pieces already typed. Wouldn't it be lovely if one could jump back and forth more readily between normal characters and subscript or superscript?

A replacement wordprocessor must, of course, allow the importing of graphics. Furthermore, it is important to me that my *Fleabyte* calculator accessories can transfer equations or answers straight into a document window. And I want my *Wormhole* accessories to work directly with data showing on-screen. In short, I don't want to lose features that I value in *FWP*.

That's Write 2

Because little or no ST software is sold in Montreal at this time, I had to buy *That's Write 2 (TW2)* by mail-order. Thanks to a copy of a U.K. version of *Write ON*, which came with *ST Format* No. 33 (April 1992) and which is a junior version of *That's Write*, I already had positive feelings about this wordprocessor. These were reinforced by a demo version of *TW2* and, hence, I knew pretty well what I was getting into. The demo of *TW2* is available from the North American Compo people. Demos are great for those of us out in the sticks and a plus for being a member of the Atari community. We owe thanks to those publishers and developers who make them available.

I had some trouble installing the real McCoy. A purchaser with two drives and no hard-drive is likely to run into the same problem. If, after making back-up copies on drive B from originals on drive A, one believes that also the working copies will be made on drive B from masters on drive A, one runs into some trouble. The working version is made by swapping master working disks on one drive; the other remains idle. That is OK, but I wasn't told.

The first thing likely to strike a person coming to *TW2* from an older wordprocessor is the thin screen characters instead of those familiar, robust characters from the standard Atari screen font, (see Fig. 1). This is normal for wordprocessors with graphic fonts. The screen characters of *TW2* are rightly intended, within limits permitted by the monochrome screen resolution (90x108 dots per inch), to resemble the printed output (120x216 dpi for a nine-pin; 300x300 dpi for an HP inkjet or laser). This does not apply to medium resolution, however.

On a color monitor one gets only nine lines per screen; the distorted characters compare to standard characters as Stan Laurel compares to Oliver Hardy. "You can run *That's Write* with a color monitor," the manual promises, but the honest truth is that using *TW2* on a color monitor is utterly ridiculous.

Once *TW2* is installed, one gets to enjoy and admire true craftsmanship. As a generalist, I am delighted with the ease with which fonts can be loaded and used. No GDOS, no ASSIGN.SYS file. A file named FONTS stores the names of fonts that *TW2* will load when booted up. One may add to this list by opening the file with a wordprocessor, typing in the names of desired fonts, and then saving it. If one opens a document that uses a special *TW* font, then that font is loaded automatically. No worries here, and

no worries about how my ancient nine-pin printer will react.

It just feels good to work in such friendly surroundings. Having said this, though, I found that a font called "Box & Line" that comes with my American version is made for some other country's keyboard. The good news is that the problem is easily fixed; in fact, it provides an opportunity to work with an ancillary program called *TFont2*. *TFont2* is used to assign to any key one's choice from a large set of characters provided with the program, including many characters outside the regular Atari domain (see Fig. 2). A little puzzling is the statement, *"TFONT* has many features which are not explained in this manual." "Why not?" one might ask out here in the sticks.

Pica (10 characters per inch, cpi) and Elite (12 cpi) make use of my printer's fonts but *TW2* exercises a control that avoids wrong readings of the subscripts 2, 3, and 8. The serious user is well advised to experiment with different printer settings for the various character styles. As for my students, no longer do they suffer from illegible superscripts and subscripts.

Both Pica and Elite have a corresponding font with characters twice the normal width. This is nice for headings that belong to the same typographical family as the body text. Nice also is the proportional font that instead of allocating the same space to, say, an "i" and an "m," allocates spaces proportional to the characters' actual widths. And there is a Greek font. The "Alternate" key lets one use the special characters beyond ASCII 127, which are mainly all sorts of accented characters. To find those characters that do not show on the keyboard one uses an accessory called "Keyshow," about which some more follows below.

Compo recommend that ST Club's *FONTKIT.PLUS* font editor be used for creating or editing one's own fonts. (Address: ST Club, 2 Broadway, Nottingham NG1 1PS, U.K.) Is there something wrong with *TFont2*? Other than for converting some characters, as I mentioned, I haven't tried it yet. I am absolutely ignorant about editing and making fonts and the manual, by its own admission, is no help. The manual mentions that one user actually created his own chess font, which is more than just impressive: many users have needs for special symbols. I noticed that *Current Notes* carries in its library two disks with additional *TW2* fonts (disks #738 and #739). An accessory, *CFONT.ACC* that comes with *TW2*, permits conversion of outline fonts in .CFN format to GEM bitmaps for various points and sizes. For this there is a separate 20-page manual.

The *TW2* disks include some files showing forms constructed with vertical and horizontal lines. "Box & Line" is automatically loaded when these files are opened. Thus, I originally came to believe that the funny name indicates a font with which to draw those lines. It is, actually, but just how it is done was not clear to me. I looked in the contents, I looked in the index, I looked into a special *TW2* feature called "follow instructions," and I perused the demo documents, all to no avail. Eventually, I did uncover the secret and I shall divulge it before finishing this article.

To get going with GEM-based wordprocessors is easy and it should not be difficult for people with reasonably flexible habits to switch from one wordprocessor to another. Getting the most out of one is another story. *TW2* has a rich assortment of features (and, yet, it isn't all that much bigger than *FWP*). Among them is the ease with which one chooses from a store of page and paragraph layouts. Each of these includes a default layout and one may make others by filling out a table available from the menu bar.

Layouts are chosen from a selector. Those in current use are identified by two-character symbols in an information bar underneath the menu bar. A page layout specifies a combination of paper size, number of columns, margins, footers and headers, and spacings between text and footnotes. A paragraph layout determines font, style, line justification, spacings between lines and paragraphs, tab stops and types of tabs (ordinary tabs, end-of-line tabs and tabs for column alignment of data). One can also select a layout that specifies the looks of titles and headings. Naturally, documents may accommodate more than one page layout.

One can elect to have vertical and/or horizontal scrolling bars for the GEM window by clicking on the information bar. Worthy of note is a panel that may be filled with data pertinent to any given document such as author, date, time, language, dictionary used, remarks, password, and various data about format and document handling. Great stuff.

TW2 produces files in its own format or in ASCII, but it loads files in any format. It has a special compassion for *FWP* and will convert its files to *TW2* format. There are special provisions for loading ASCII files, with or without a carriage return at the end of each line, and for formatting; but by their very nature, things are not always entirely smooth sailing. Other formats, including program source codes, may be loaded as well.

Text lines that are fully justified (i.e. flush left and right) look better with *TW2* than with *FWP*. *TW2* pads word spacings proportionally, which can only be done in the graphic printing mode, whereas *FWP*, which has no such mode, pads word spacings with space characters. Graphic printing is slower, of course, but not too badly so, and I cannot quite see this as a major objection for ordinary users unless they really are in a tearing rush.

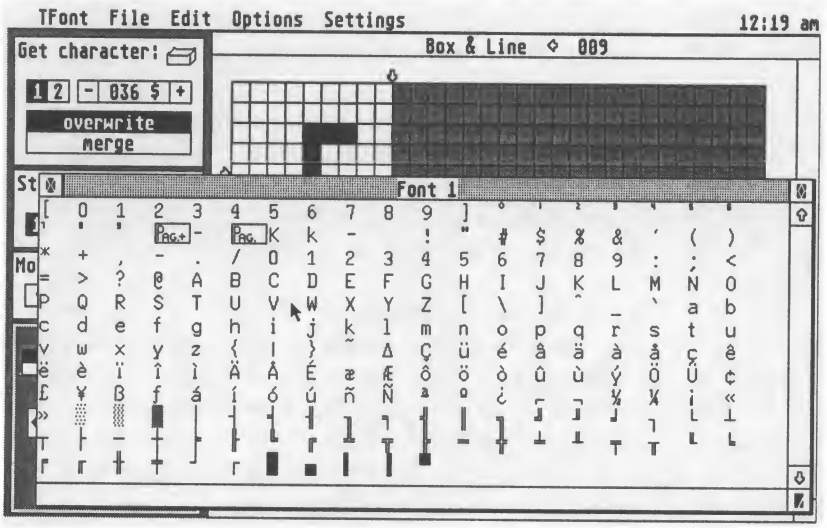

Fig. 2–**TW2 Character Set**. A wide assortment of characters from which to make up a keyboard. Allocation of a character to a key is a matter of pick and click. But one can go further, according to the *TW2* manual; a journalist designed his own chess font. With such scope *TW2* is a bargain.

Most welcome, and for me a definite step up from *FWP*, is *TW2's* ability to handle endnotes as well as footnotes. And there are means for generating a table of contents and an index.

TW2 comes with an American dictionary and American rules for hyphenation (that produce gems such as "ar-eas"). It is made to permit the inclusion of personal preferences whenever one's linguistic culture is offended. The accommodation of languages other than American English is sure to be a boon for many, especially polyglots. Various dictionaries are sold separately. A welcome touch for Atarists here in bilingual Canada ought to be a Canadian-French dictionary.

Before returning to the reasons why I myself bought *TW2*, here is an annotated list–far from complete–of features not commonly found in wordprocessors. Unless specifically mentioned, I found them to work smoothly during my short assessments.

• **Disk functions**. A utility that lets one delete, copy or rename a file, or create a folder.

• **To/from clipboard**. The clipboard meets Atari specifications and its contents are available to other programs that meet those specs.

• **Hide**. Clicking on "Hide" removes any identification of a block of text and one is warned to do so when a marked block exists off-screen. This prevents accidental style changes in a block left marked. I thank the *TW2* people for this one for, with this feature, one prevents the accidental loss of a lot of labor.

• **Generate index. Mark index**. Also words not in the body of text can be placed in an index by listing them separately.

• **Generate TOC. Mark contents**. Headings and subheadings enter a table of contents automatically, but one may include other selected words and phrases as well.

• **Follow instructions**. A limited programming language for handling special tasks. Examples listed in the manual are (1) automatically numbering of charts, pictures, paragraphs, and chapters with either arabic or roman numerals, (2) doing calculations in a mini-spreadsheet format on data in the document, (3) alerting the user to enter personalized information in a standard letter or form. It is unfortunate that the manual does not describe well how to create and use "instructions," but I have been given to understand that a proper tutorial might be made available by Compo if there is a demand for it. Compo also pointed out that examples of instructions may be found upon loading demo files. With the loading of a file come corresponding paragraph and page layouts. Examples of instructions may be found by scrolling the "instructions" field of a paragraph layout.

• **Search. Replace**. These will not only let one find or replace ordinary character sequences, it also permits searches for and replacements with special patterns such as produced by graphic fonts.

• **Indent**. A tab key can indent a whole paragraph. It may be used after paragraph number and thereby excluding it from the indentation instruction.

• **Hyphenation/Correction**. Words that do not hyphenate properly can be put in a special list of exceptions. Hyphenation may also be done from a dictionary or manually.

• **Preferences**. One may set a time lapse for automatic saves or state a preference for period or comma as the decimal character.

• **Load macros. Save macros**. Great for same sequences that recur often, for example, a specific chemical formula. Macros in RAM may be added to or the whole lot may be replaced.

• **Load configuration. Save configuration**. With these one saves the configuration of the entire *TW2* program as it is in current use; and on reopening the program, one returns to exactly the same place one was before. Figure 2 shows *TW2* overlaid by three accessories. A saved configuration sizes and places the *TW2* document screen for trouble-free multitasking.

Other features include page preview and quick printing of drafts without pictures. Besides the menu items, there are a number of commands that can only be given from the keyboard. These include the insertion of date or time and the copying of paragraphs.

Besides its formidable depth, *TW2* has reasonable width, with which I mean an ability to cooperate with

other programs (see "The Personal in Personal Computing" in last month's *Current Notes*). For one, *TW2* permits importing graphics, about which more later under "Alternatives." It also lets me pipe in work done with my *Fleabyte* accessories and, thereby, encourages their further development.

The manual mentions a so-called XACC protocol, a proprietary Compo design, that permits communication between accessories and *TW2*. Accessories included with the program are:

• **That's Snap.** With this accessory one can select a part of a screen for either storage as an image file or in a special buffer. If there is no menu bar, as with *DEGAS*, the accessory may be called by a special key combination instead. This makes it possible to use a program like *DEGAS* and take an .IMG snapshot without having to go through specially loading *DEGASNAP*. This procedure is not as conveniently direct as the use of *DTPaint*.

• **Keyshow.** Shows a character table for the font in use. Characters beyond those shown on the keyboard may be called and inserted in the document. And it also let me uncover the secret of making boxes and lines! The necessary characters are obtained from the "Box & line" font by using the numerical keypad in the shifted mode. Now, what could be simpler?

• **TW_MAC.** Shows what keys have macros assigned to them and permits one to edit and inspect an existing macro.

• **TRech.** A button-type calculator that will let one put answers to calculations in the current document. One shouldn't toot one's own horn, but objectivity compels me to state that *Fleabyte* is easier to use and is more versatile. *Fleabyte* accessories are available from GEnie or from the *Current Notes* Library as disk #770. (This is not to say that far more versatile and/or powerful calculator programs don't exist. Judging by their demos: J. Andrzej Wrotniak's *El Cal*, for example, and Paul Dube's *Solutions*–these formidable calculators are two more reasons for wanting full multitasking with pipelining. The *Fleabyte* accessories, unfortunately, have not been properly beta tested.)

TW2 is billed as a professional wordprocessor, but many of its professional features may well suit the general computist. All in all, *TW2* provides much more than I was looking for and probably more than most users will ordinarily need. What may well happen is that, by using a superior wordprocessor, one is led to utilize it at a more sophisticated level than heretofore practiced, and, maybe, find novel and useful applications for it. *That's Write 2* is one fine piece of work and Compo invites users' comments to guide its further evolution.

In fairness to readers, I must mention that I did have problems with the manual. Let me try to be evenhanded about this. As manuals go, the one that comes with *TW2* may well be better than most that have come my way. Moreover, Compo makes it quite clear they are ready to help. The problem is that incompleteness and obscurity readily turn into frustrating experiences for the general computist who tries to stay on top of many descriptions of programs and their updates and alternatives. Specifically, for people stepping up from *FWP* or *WordWriter* there is an awful lot of new territory to become familiar with.

Unfinished Symphony

And how about the personal objectives mentioned earlier? Well, *TW2* meets a good chunk of them. A piece of friendly advice for those who will use *DTPaint* as an accessory with *TW2*: it is probably better to not formally exit *DTPaint* while a document window is open, because of interference. *Fleabyte* is best used by pushing up the size box of the document window, just enough to cause a slight overlap between it and the *Fleabyte* accessory, see Fig. 1. As to the *Wormhole*, some of its present usefulness may be replaced, for now, by calculations designed by "instructions" that are said to work as a small spreadsheet with data showing in the document window.

A major concern is still mathematical and special symbols, such as are needed in chemistry, and many of which take up more than two lines. For now, I may handle some of this with the help of *TFont* and make others separately, perhaps by making a set of small .IMG files or by lassoing symbolic expressions showing on the *DTPaint* accessory. The manual mentions a formula editor. It isn't finished yet, but once it is done, it will be made available separately. I do not know how much this editor may contribute to a solution. Graphs, too, must be made separately and then imported. Here, again, *MultiTOS* with pipelining should be the ultimate savior. A third version, *That's Write 3*, is being beta tested and slated for release this summer. In the meantime, *TW2* and *DTPaint* do not only serve office computing, they are also advancing the art of computing more intimately into the personal domain. I hope to account for this comment in not too distant a future.

Alternatives

There is a program for producing a wide range of mathematical expressions called *Sigma*. It comes with *Le Redacteur*, from France. The interested reader should, given an opportunity, take a look at it. *Sigma* automatically directs typed inputs to the proper positions relative to a given symbol. (I didn't further consider *Le Redacteur* because it doesn't cooperate with *Fleabyte*.)

Calligrapher3, which does so cooperate, sells for about the same price as *TW2* does. Codehead, the American distributors, also make demos available (GEnie ST Library #276366 for my mono-version, #27389 for medium resolution). This program

has at least three features that attract me: (1) It lets one not only import .IMG files, but .GEM files and DEGAS files as well, (2) graphics can be put straight in line with text, something that can't be done with *TW2* (but can be done with the upcoming version, *TW3*) and which is especially attractive for mathematical graphics, and (3) it can produce formulas. It is unfortunate, but understandable, that the demo had this third feature greyed out. Taking this together with a lack of Canadian representation makes it hard to gain sufficient familiarity with the product and with its proprietary extensions called PAKs.

As a general user, I am in principle averse to a Swiss-knife approach, to proprietary extensions, to private instructional languages, and to private protocols. That all adds up to a hassle. For various reasons, I think that personal computing is better served by programs made to freely interact with one another. One, the user may replace poor links with stronger ones as they become available, and do so without undue expenditure. A Corollary with this, a user needs to become familiar with only a small chunk of new program at a time. This, it seems to me, would be friendly to the overloaded mind and, therefore, essential for comfortable personal computing as it widens up. A third advantage may well prove to be a slower gain of software girth. And, finally, it isn't pleasant to be fenced in too small a corral.

Today, I view the wordprocessor as the central application whose usefulness can be augmented with specialized accessories. But I really wonder what computing would be like if one could work with any program straight on the window of another; to be able to use a graphing program for working directly on a wordprocessor's window or to use one's fondest font for writing directly on the window of a drawing program.

Or, perhaps, to have a window that may be called directly from the GEM desktop, a common slate that may be addressed by one and all application programs, to draw on, to tabulate on, to calculate on. Maybe to let her write on, "I love you so."

That would be quite alright, too.

Relevant Literature

1. Steve Henderson, "Redacteur 3 - English Version," *ST Applications*, No. 16, pp. 8-13 (April 1992).

2. John Godbey, "Calligrapher Professional," *Current Notes*, 12, No. 8: pp. 66-68 (October 1992)

3. Steve Henderson, "Calligrapher PAKs," *ST Applications*, No. 19, pp. 18-21 (July, 1992).

4. Brian David Gockley, "Wordflair II," *Atari Explorer*, September 1991, pp. 30-34.

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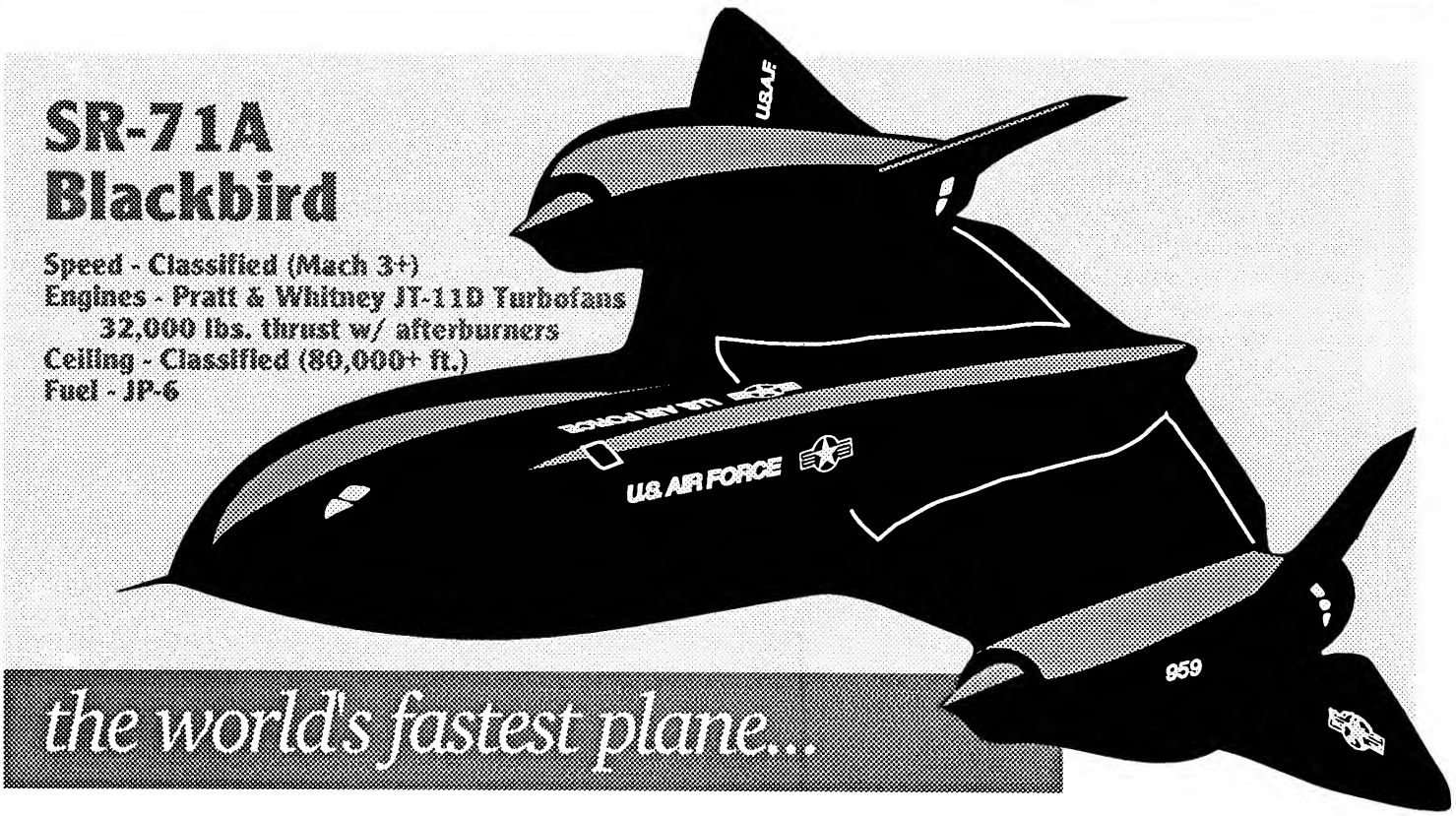

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Basic Elements of Type

And Reviewing The HP IV Printer

Running Out of Ram *by David Barkin*

Joe Waters has struck again. The following article is going to be typeset on my very own printer, the HP Laser Jet IV. The first part of this article is a presumptuous plagiarizing of the propaganda I use for my side business of Desktop Publishing. I have a brochure which I give to my customers showing printed examples of all the typefaces I currently have in stock and some examples of special effects. I'm going to leave out the special effects, but with a little modification, most of it will be used below. The first part of this article is presumptuous for another reason; because while my knowledge of using type is greater than even an educated lay person's it is by no means complete, thus the opening word of the title "Basic." But by no means is the information in this article wrong, and the printed examples may very well be of use to anyone interested in computer typography.

The second part of this article will be a review of my new printer. In some ways, the entire article is a

The Teddy Bear

Saves The Day!

An Almost True Story.

Figure 1. The font Hobo is used to title a children's story. Hobo's gentle curves create a friendly feeling.

THE TEDDY BEAR

SAVES THE DAY!

AN ALMOST TRUE STORY

Figure 2. We substitute the typeface Crypt. This is either a good example of an inappropriate typeface or a satire.

review of the printer because the article itself demonstrates the printer's 600 DPI resolution. So here's part I.

Elements of Type

The use of type for comprehension and artistic effect is as old as typography itself. There are literally thousands and thousands of different typefaces and fonts with more being created each day. I will use this space to provide a very brief explanation of what some of the terms used in typography mean, how they apply to your document and some examples of what they mean in practice.

Definitions

The term typeface relates to a characteristic style of the print. For example, Times Roman is a typeface. The term font applies to variations within a particular typeface. Times Roman Italic is a separate font within the typeface of Times Roman. Before the advent of computers, with their scalable fonts, the word font meant a particular size and style of a specific typeface. This term has become obsolete, because unlike the old days where the printer had to keep full sets of typefaces in every possible size, the computer publisher needs only have the type face itself and the computer does the scaling.

This question can be overdone because some computer software programs contain only one typeface itself and use software commands to slant or add weight to the face in order to simulate Italic and Bold. Italic and bold are really separate fonts, individually created. Their true look is lost by using computer commands instead of the font itself. Take a look at the difference in the three following sentences. In and of itself there is nothing wrong with the slanted type but it's not a true Italic font.

Times Roman is a separate font.
Times Roman Italic is a separate font.
Times Roman Slanted is a separate font?

This article is set in DMC Times, but the above three lines are set in CG Times. Why the change? Up until the May issue of *Current Notes*, most articles were set in the original version of Times that came with *Calamus*. Using this face had one big advantage. Since there are so many different versions of different typefaces available, *DMC's* Times became the common denominator. Everyone who uses *Calamus* has this typeface. I'm the last one to get the news of the changeover. But hopefully, the above example does show that the true italic font results in a much better "look." Using the same *brand* of typeface is important, because as this article will demonstrate, not all typefaces are alike.

Type is generally measured in "points." The number of points that a particular line of type takes

These six paragraphs are all the same. They are examples of the different readability of different typefaces. They are all set in 11.5 point type for a better comparison

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Figure 3. Six different typefaces examined for legibility and space consumption.

The typeface Bodoni has a very small x height. This means that the typesetter should give any body of text set in Bodoni a little more room to enhance its legibility. If we did the same thing to Times the opposite would occur and we would lose legibility. Bodoni Makes a fashion statement.

The typeface Bodoni has a very small x height. This means that the typesetter should give any body of text set in Bodoni a little more room to enhance its legibility. If we did the same thing to Times the opposite would occur and we would lose legibility. Bodoni makes a fashion statement.

Figure 4. The proper leading for a typeface can be very important. In the last paragraph I give Bodoni an extra point of leading.

up is measured from the highest "ascender" to the lowest "descender," in other words from the top of the highest letter to the bottom of the lowest. As we will show later, type set in the same size uses the same amount of vertical space but the horizontal space can vary quite a bit. There is roughly one inch for each 72 points. In practical terms, The New York Times is set in 10 points, but with very little "leading" (more on leading further on), while the usual output of a typewriter is 12 points. What you are now reading is produced at 10 points.

Choosing a Typeface

Now the main question, why so many different typefaces? The typeface is to the printed page what music is to a movie. In a subtle way type can add or detract from what is being read. Sometimes we try to make sure that the type *doesn't* have an impact on the reader. A rather blatant example of using the wrong type appears in the illustrations on the first page and will cover this point quite well.

As we can see the typeface projects, or can project, a feel for the material being produced. In figure three the same paragraph will be repeated six times using different typefaces. These faces have been chosen to illustrate the readability of different classes of typefaces.

Let's take a closer look. The first paragraph is written in (CG) Times Roman, the beige of type faces. Easy to read, Times is meant for large bodies of text. Times is also a very space efficient face. The "serifs," the little feet at the tips of each letter enhance legibility. The "feel" of Times is to project nothing at all. It lets the text speaks for itself.

The second paragraph is in (CG) Modern Black Letter. This is a display face designed to give the feel of Old English with just a little more legibility. This size is too small for easy reading.

The next face we examine is (CG) Futura Book. Futura is a Sans Serif face. Which is to say that it lacks these little feet. While quite legible, it grows difficult to read for large portions of text.

Our next face is (ITC) Zapf Chancery. Zapf falls into the category of difficult to read yet it adds something to what is being read. It is unsuitable for large bodies of text but is legible enough to be used for complete paragraphs. Zapf is also very space efficient.

(ITC) Lubalin Book is a Slab Serif face. It is both legible and easy on the eyes, but its blocky appearance often detracts from what is being read. As you can see Lubalin also uses up a tremendous amount of space.

(CG) Coronet, our last example, is a script typeface which at this size is barely legible. Script and display faces are made to project a certain feeling – they must be right for the job or they will definitely get in the way of what the text is saying. It's a shame that I make Coronet, really a beautiful typeface, look so poor just to make an example.

Woe unto me. I will surrender my first born hamster if you will give to me a printed page which will match my typeface. Lo, you have taken all my hard earned cash and blown out my document. (CG) Times

Woe unto me. I will surrender my first born hamster if you will give to me a printed page which will match my typeface. Lo, you have taken all my hard earned cash and blown out my document. (DMC) Times

Woe unto me. I will surrender my first born hamster if you will give to me a printed page which will match my typeface. Lo, you have taken all my hard earned cash and blown out my document. (Adobe Times)

Woe unto me. I will surrender my first born hamster if you will give to me a printed page which will match my typeface. Lo, you have taken all my hard earned cash and blown out my document. (Pagestream Tymes)

Woe unto me. I will surrender my first born hamster if you will give to me a printed page which will match my typeface. Lo, you have taken all my hard earned cash and blown out my document. (Valenti) Tiempo Light

Figure 5. Five different versions of Times Roman set at 12 points. Actually they are all legitimate but aside from some of them being better designed, they all use space differently.

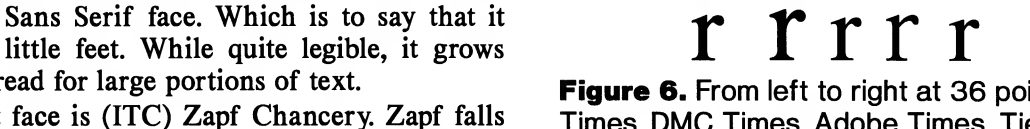


Figure 6. From left to right at 36 points: CG Times, DMC Times, Adobe Times, Tiempo and Pagestream Tymes.

One more aspect of using text may come as a surprise. Notice that while all of these fonts are the same size they use up space in dramatically different ways. Lubalin takes up five lines while Zapf uses only three. This is because the "x" height, that is to say the size of the lower case letters, varies from typeface to typeface. In case you are still skeptical, take a ruler and measure the vertical height of the paragraph of Zapf and compare it to the first three

lines of Lubalin. Thus, when composing a document, not only do we choose typefaces by appearance but also by how much space they consume.

Notice that, when naming these typefaces, I preceded the name with bracketed letters. These stand for the manufacturer of the face. This creates another problem, Each designer of a face has his own idea of what it should be. This is what drives computer publishers up the wall and keeps the funeral industry supplied during slow days. You typeset a document, take it down to the service bureau and at ten, hard earned, dollars a page it comes out wrong. Not all the screaming and complaining in the world is going to make this a simple question. On the preceding page we have five different versions of Times Roman repeated to make this point.

"Pushing" the Type

Typesetters collect different typefaces with a fanaticism reminiscent of the religious wars of the 17th century and, indeed, we have to. The flexibility to deal with all the problems of typesetting becomes a nightmare without the correct typeface. Still, the computer offers other tricks. Take the following lines:

Lubalin takes up space

Lubalin compressed takes up less.

The second line is compressed by 30%. The only limit to this is the practical one of legibility.

Lubalin compressed 70%, we get carried away.

If we want, we can go in the other direction; Lubalin at 120 percent.

Lubalin Expanded is tiny?

If these examples of distorting a typeface look strange, then really surprise yourself and measure the height of the capital L's - They are all the same height.

When to Underline

Often people will bring in their manuscripts and these pages are heavily underlined. Underlining is no problem for the computer, indeed we can set underlining in ways that boggle the imagination. We can set the offset or the underline thickness or give the text double underlines. My customers then want me to use underlining in their documents. But what is not realized is that underlining is a product of the limitations of the typewriter and is not really conducive to legible documents. *Using bold or italics is a much better way to add emphasis.* **Underlining should only be used for a specific job and *usually for display purposes.***

Another term often heard in typography is "Leading" (pronounced ledding). This expression comes from the printing press when typesetters would put lead in between lines of type in order to separate them. Sometimes different typefaces require more or less leading in order to improve legibility. In figure 4. we have two paragraphs of Bodoni; one with the usual amount of leading and one with some extra space, that a face like Bodoni actually requires.

The last question I'm going to cover in this introduction to type is the arbitrary classification of different faces into different catagories. It is, of course, obvious that a script face like Coronet cannot be used for large bodies of text, but some so called display faces can be just as legible as some body text faces. Body faces are designed to be easy on the eye and they act as an aid in prolonged reading. But short sections of text can be set in many of the so called display faces, and, at the same time, text faces can be used for display purposes. "Revue," which is a very popular display face, is quite legible, but more importantly, Times Roman can do just fine as a display face. It often depends on what you are saying and by how you want to say it. What feeling do you want to project onto the document? For example:

Shoot The Author!
Shoot The Author!

Shoot The Author!

Shoot The Author!

As can be seen, Times, in this case Times Bold Slanted in 24 and 12 points, does very well on its own as a display face although the font "Titles" by *Safari Fonts*, does a little better in making the point. At the same time, Revue Light is very legible even at this small size. For an even better example, the title of this article, "Basic Elements of Type," is set in Times Bold at 36 points.

One last question. People are always asking me why I use the sentence, "The quick brown fox jumps over the lazy dog," to demonstrate how a typeface looks. This sentence contains all the letters of the alphabet. It's short and sweet and by using words instead of just the letters it gives my customers a chance to see how the print will actually appear. In catalogues designed for typographers the full character list is shown.

The preceding was a *very* brief introduction to defining the terms used in typography. I could write an entire series of articles and still not use up my knowledge, let alone the knowledge held by professional type setters. Whatever the faults of my article, if one considers it an introduction to this review of the Hewlett Packard IV printer then it serves admirably. This printer brings real type setting onto the home computer desk. This is a true 600 DPI machine and its built-in resolution enhancement raises this still further. My old HP III allowed me to make camera ready copy for quite a few jobs - But this printer allows me to do almost anything, that doesn't directly require color, right at home. The following is a short letter I sent to my service bureau after I saw the output of my new printer.

Dear Blood Sucking Vampires

I don't need you no more. You fascist pigs can return to the devil that made you and get real work shoveling out septic tanks. A curse on you and all your generations into the future and all your generations into the past back to the first primeval leech in the primordial Jurassic swamp that spawned you.

I had to waylay the mail person at the front door of the service bureau to get this message back because I suddenly realized that I still needed them for color work.

How good is this printer? (This article is going to babble a bit because I am so excited over the printer). Let me pause and give a brief physical description. The HP IV has a smaller footprint than its predecessor. It measures 11.7 inches high, 16.4 inches wide and 15.9 inches long. It weighs 37 pounds. It certainly feels a lot lighter then the III. It has both parallel and serial ports. The parallel port is *not* a standard port but is something called a "Bi Tronics Parallel." This is completely compatible with the usual Centronics port on our computer but exchanges data at a much higher rate of speed. The printer comes with 2 megs of Ram and is expandable to 32 megs. More on all this further on.

Set Up

Don't expect to have a nervous breakdown setting up this printer. HP provides a quick set up guide. The whole process took me all of 20 minutes and that includes adding an additional eight megs of memory and plugging in the toner cartridge. The control panel is located on the top of the printer and is very conveniently arranged. Just about all settings are through the control panel including toner density

Figure 1. A photographic collage of three children at 600 DPI. This is from a 150 DPI .TIF file.

and HPs resolution enhancement. Resolution enhancement is a special process first developed by HP. Briefly what the onboard computer chip does is to substitute smaller dots, where the text or graphics form a curve, to eliminate the jaggies. It worked fine on the earlier machines that had it and it works great on this machine. Since this is a 600 DPI printer, and my old printer was a 300 DPI, "fine" means two different things. Overall, the improvement in text quality is phenomenal; black and white photo's come out with incredible sharpness. Look at the examples on these pages.

The printer comes standard with a lower 250–page letter cassette and a built in multi–purpose cassette. This multi–purpose cassette is a new kind of gadget for me. You push on the front door of the printer and a paper holder drops down. You pull out the extension piece and load in up to 100 sheets of #20 paper. Personally, I use 24 pound paper. You can load in any size from letter to legal. Set the side guide and it works much like a normal paper cassette. In practice this means that a person like myself, who doesn't use much legal size paper, doesn't need to go out and buy the optional legal size tray. At the moment, I can only use this as a manual feeder since none of the drivers I use can take advantage of this tray. Using the control panel, I choose between three possible settings for this tray. The one I selected tells the printer to use paper from this tray *first* if the paper sensor detects paper there. When running *Calamus* with its beta drivers, I must, in addition, use the control panel to set the paper size as "legal" in order to get *Calamus* to print pages that size. No doubt the finished drivers will eliminate this step.

Figure 2. At last! My pitbull all grown up. Don't be fooled. This dog is a killer!

Compatibility

Any driver that will run the earlier HP II or III will drive the HP IV. Of course, these drivers will not be able to access the 600 DPI print mode of the IV. No program I use that can print to earlier HPs has given me any trouble. There are already 600 DPI drivers available for *Calamus* and *Compo Script*. Both are beta drivers but work flawlessly with certain limitations. The Compo driver is off on positioning the

	HP III	HP IV	
	300 DPI	300 DPI	600 DPI
Five page Current Notes Article	4:14	2:02	5:40
700 K .TIF Photograph (8 by 6 inch)	:42	:16	:59
1.4 Meg .TIF Photograph 13 by 8 inch)	1:48	:36	2:08

Table 1. These results were obtained using Calamus SL (Calamus 1.09 prints at the same speed but cannot load .TIF files) on an Atari TT Computer. Pagestream users should note that Calamus SL spends very little time composing the page. ST users should multiply these times by two and a half. This table is printed out in 8 point Swiss. These times are in minutes and seconds.

page, while DMC's drivers are separate for both legal and letter sizes. Both companies promise quick improvements. I'm sure other software producers are already working on drivers. This printer sets a new standard and will have to be kept up with.

If you are only interested in doing word processing with this printer (and if that's the case why are you buying it), then the two standard megs of memory are sufficient. If you are going in for Desk-Top Publishing, then you will need at least 8 megs to print a legal size page at 600 DPI. This will also be true if you are going to be downloading soft fonts to the printer. I've set myself up with an 8–meg expansion board and have had no problems with any page, no matter how large or complicated, printed out by *Calamus*. These include complex vector and huge .TIF files. (As a demonstration of legibility, the end of this article will be set in 9 point CG Times.)

Speed

A 600 DPI page has four times the information that a 300 DPI page does. I was braced for long waiting periods as the information was processed. Here came my biggest surprise. The Hewlett Packard people have incorporated some new hardware in their printer port to dramatically increase the speed of the printer. While in 600 DPI mode the printer is a bit slower than the HP III in 300 DPI mode, the question of speed is not a problem. In table one are some comparisons. While looking through this table keep in mind that in 300 DPI (draft mode) the output is still better than on older printers. This is because the toner used is much finer.

This Bi Tronics Parallel port seems to suck information out of the computer. Another benefit of this port is that I could get rid of the printer amplifier I had purchased to get my old HP III to work with my computer. The Atari computer apparently had a nonstandard parallel port and the HP III would not work properly. Part of this problem was with Hewlett Packard. I can say this with some assurance because some HP printers would work with my Mega ST and some wouldn't. It depended on the manufacturing date. This may no longer be a problem. I had to remove the printer amplifier to get my Mega to work with this printer.

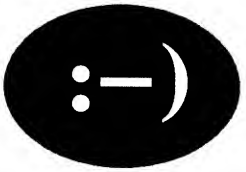
The toner cartridge on my HP III is advertised to last 4000 pages. This is based on typewriter text, not graphics. In practice 90 percent of my work is full page graphics and this is very heavy on toner. I used to get roughly 1000 pages. The new toner cartridge for the IV is about $20 more expensive and has a claimed lifespan of 6000 pages. At the moment I'm still on my first cartridge and have a page count of 723 pages. Go figure.

No doubt HP will release an entire slew of less costly printers with slightly slower print speed. The IV prints at 8 pages per minute. They have already released the HP IVsi. Do I suggest you buy this printer? Did my dog not growl only two years ago? Do chickens still lay eggs? __ Yes!

CompuServe T
Staying in Touch

Little Wonders

by Michael D. Mortilla



"He that commands the sea is at great liberty, and may take as much and as little of the war as he will."

Francis Bacon 1561-1626

Tower of Babel

It is natural for us to want to be in control of our environment. Not necessarily to "rule" over it, but rather, to be in a position where we can accomplish what we want, when we want. We also like to be understood by others.

These objectives aren't always attainable when we're using computers to communicate. After all, we only have the ASCII character set and our language to use. But within that limitation, there are alternatives available to us. If a picture is worth a thousand words, and we can create a picture using the ASCII character set, then perhaps we can come closer to a more universal communication while telecomputing.

The Pyramids

At times it can seem that our computers are like the Sphinx or the Great Pyramids. We know they're there and that it took a lot of time, energy and skill to create, but what the heck does it all mean? CompuServe has done a lot to de-mystify the telecomputing process by providing the Practice Forum and a host of files and guides to get us using the system efficiently. Not only that, but they have seen fit to suspend our online charges while in this area!

The Bible

While reading messages and communicating in "real time" on CompuServe and other services, you will run into all sorts of cryptic messages, such as: ROLF, IMHO, IANAL and other seemingly obscene acronyms. In point of fact, these stand for phrases. The purpose of using abbreviations is so that you don't have to type commonly used cliches. Some of the more frequent ones you'll see are:

CIS	CompuServe Information Service
Sysop	System Operator; people who manage the forum
WizOp	Wizard Sysop; the primary forum administrator for a forum
BRB	Be Right Back
BTW	By The Way
FUBAR	"Fixed" Up Beyond All Recognition
FWIW	For What It's Worth
FYI	For Your Information
gr&d	Grinning, Running, & Ducking
IAE	In Any Event
IMO	In My Opinion
IMHO	In My Humble Opinion
IANAL	I Am Not A Lawyer
IOW	In Other Words
OIC	Oh, I see
OTOH	On The Other Hand
PITA	Pain In The A..
ROLF	ROLling on Floor, laughing
RSN	Real Soon Now
RTFM	Read The [Fine] Manual (or Message)
SNAFU	Situation Normal, All "Fixed" Up (also: All Fouled Up)
TIA	Thanks In Advance

Mona Lisa

If someone uses an acronym you don't recognize, just ask and they're usually more than happy to impress you with their superior control of the ASCII language! After a while, you'll be typing cryptic messages like a pro! IMHO.

OTOH, there will be times when a forum member or SYSOP will leave an even further cryptic note that bears little resemblance to the English, or any other, language. Something like: :)

Turn it sideways and . . . it's a smiley face! That means the writer was "happy" or meant the comment in a lighthearted way. This ASCII design is called an "emoticon."

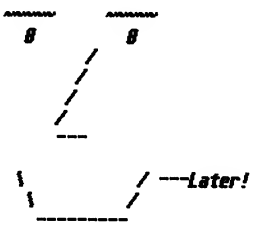
Again, years of telecomputing have seen the development of a whole subculture using these symbols. Now, you can go to you local book store and buy a little book with all these little faces and their meanings, *or* you can read 'em online in the CompuServe Practice Forum. Below are a few I've captured for you:

Emoticon	Meaning
:-]	Smiley blockhead
:-%	Has beard
:-o	Singing
:-t	Cross
:-:	Mutant
:-(	Drama
:-)	Comedy
:-?	Smoking a pipe
:-=)	Older, with mustache
:-\	Undecided
:-p	Sticking their tongue out (at you!)
:-)'	Tends to drool
:-'|	Has a cold
:-)8	Well dressed
:-D	Talks too much
:-#	Lips are sealed.
:-o	Is shocked
:-*	Just ate a sour pickle
:-s	After a BIZARRE comment
:-o	Is surprised
:-{	Has a mustache
:-|	No expression face, "that comment doesn't phase me"
-:-)	Idea
:-&	Tongue-tied
:-9	Licking its lips
:-(	Sad
:-'	Spitting out its chewing tobacco
:-*	After eating something bitter
:-›	Hey hey
:-X	Wearing a bow tie
:-6	After eating something sour
:-0	User is an orator
:-7	After a wry statement
:-#|	Bushy mustache
:-@	Face screaming
:-%	Banker
:-}	Wears lipstick
:-v	Talking head Smiley
:-c	Bummed out Smiley
:-x	"my lips are sealed" Smiley
:-@	Beard has permanent wave *or* was drawn by Picasso
:-|	"have an ordinary day" Smiley
:-e	Disappointed Smiley
:-‹	Real sad Smiley
:-I	Hmm
:-8(	Condescending stare
:-O	Uh oh
::-)	Wears glasses
:›	Midget Smiley
:›)	Has a big nose
:¯)	No explanation necessary
:n)	Funny-looking right nose
:u)	Funny-looking left nose
;-)	Winking Smiley
;-\	Popeye gets his lights punched out
(-:	Left-handed
(:I	Egghead
{:-)	Smiley with its hair parted in the middle
{(:-)	Wearing toupee.
+-(:-)	Pope
+:-)	Smiley priest
,-}	Wry and winking
*-(	Cyclops got poked in the eye
*:o)	Bozo
*‹|:-)	Santa Claus (Ho Ho Ho)
‹:I	Dunce
›:-‹	Mad
%-^	Picasso
%-)	Cross-eyed
#-)	Partied all night
@-)	Cyclops
@:I	Turban
|-O	Birth
|-)	Hee hee
|-D	Ho ho
8-)	Wears glasses
8-|	Suspense
8-#	Death
8:-)	Glasses on forehead
8:]	Smiling face of a gorilla
B-)	Horn-rims
P-)	Getting fresh
[:-)	Listening to Walkman radio
[:|]	Robot

Get the picture? :)

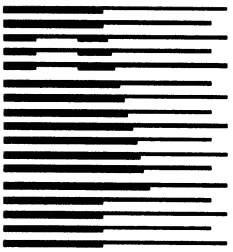
As you know, there's more to telecomputing than funny faces; and while it's nice to add spice, at some point, we have to get down to business. In our next installment, we'll talk about commands and how they will make CompuServe do what you want it to. Not only that, but you can save money to boot!

Oh yeah, I almost forgot! Besides all these neat little acronyms and emoticons, you might try you hand at ASCII art!!!



ENDING BLOCK by Richard Gunter

At the Finish Line



Living is somewhat analogous to traversing a time-dependent network, within which major decisions and events are nodes, and the branches not chosen are "might have beens." The concept appears in Robert Frost's "The Road Not Taken," and has been used by many science fiction writers to lend plausibility to stories about alternate universes. (How would history have been affected if Richard I had lived, and if magic really worked)?

No, I'm not turning into an amateur philosopher or a fantasy writer, but I am experiencing the consequences of a couple of pivotal events. One of these represents an upheaval in the course of my career; the other concerns my relationship with *Current Notes*.

A New Job

As regular readers are aware, I missed last month's issue. The reason was a press of professional activity. That's a euphemism for the final weeks of a six-month job hunt, during which I expected a layoff notice at any time. Such a situation creates a certain, shall we say, pressure... Having failed to turn up a viable assignment with my company, I accepted a position with another firm and now have "real" work to do for the first time since October.

I'd been with my former employer for 23 years—changing companies is, obviously, not something I do easily; nor is it something that I was emotionally prepared for. The parting was amicable, but instructive.

On Networking

The job market has become uncertain and dangerous (no news to anybody). Do *you* know anyone who's switching jobs because he *wants* to? The value of one's personal network has been burned into my brain by recent events, as has the comparative uselessness of "Human Resource" departments. You know about HR; they used to be called the Personnel Department.

These organizations are fairly well organized to assist managers in hiring new employees (collecting and distributing resumes, conducting preliminary interviews, handling new employee orientations, etc.). They're also pretty well organized for handling separations. They can ease one's way through that stack of outprocessing forms with considerable alacrity. But they're not well prepared to assist their companies in retaining experienced personnel, and they're certainly not well positioned to assist personnel who need a new assignment but don't want to leave their present company.

Hence, a word of advice: stay in touch with those former colleagues, clients, managers, co-workers. These people constitute your personal network of contacts. If the crunch comes, use that network. In my case, it worked. This time, anyway. You can't assume that your company will take care of you, or that your HR department will be either inclined or prepared to provide much assistance. Understand that I'm not being bitter here; just realistic. I'm sure I'll be adjusting to the changes for some little time to come; however, my new employer is well-respected, and their standards of performance and quality are consistent with my own.

The *Starting Block*

That second pivotal event is that this will be my last regular *Starting Block* column. (There's one more project I hope to finish, and there should be time to do so). My association with *Current Notes* has been satisfying, instructive, and a huge lot of fun. Joe and Joyce are wonderful people whom it's been a privilege to know. The opportunity to meet and appear in the same pages with the likes of the Junkyard Pussycat, Andrzej Wrotniak, Dave Small, David Troy, Mike Heininger, Frank Sommers and all the rest is a source of memories that I'll cherish for a lifetime. I'm not sure which of these upheavals is more of an emotional trip. I'll miss a lot of wonderful people and associations in both cases.

A working principle that I've followed with the *Starting Block* is to attempt every procedure or software product that I write about. It's not fair to the readers to do less. I'm in the process of disposing of my Atari equipment and won't be able to support Atari-related projects once the equipment is gone. That makes it impossible to do an adequate job with the column.

Why the IBM?

I recently acquired an IBM clone for business reasons; namely, to pursue a plan for acquiring additional marketable skills.

Usage patterns around this chaotic household show less and less interest in using the Atari systems and more interest in the clone. As I mentioned in a previous column, the kids practically met me at the door with game boxes tucked under their arms, waiting for the IBMish machine to be set up. My daughter has switched from Atari *Word Perfect* to MS *Word for Windows* for her college papers. She has found the transition pretty painless, and the program is superior to everything I've tried on the Atari platform. My daughter has even gotten into computer gaming on the new machine, an activity for which she's shown little previous interest. Even my wife, an avowed computer illiterate, has expressed a desire to learn some skills she can put to use at work. I've found MS *PowerPoint* to be an outstanding package for presentation graphics, which is one of the major business activities I've used my Atari desktop publishers for.

All this has forced me to reexamine what the role of computers in my household must be, and what choices make the most sense for me and mine. The IBM platform's dominance has insinuated itself into my household due to both school and office influences. The software products that we need to use and to be compatibile with are, for the most part, superior products that offer power and features not readily available on the Atari platform. Even such outstanding developers as the Codeheads and Dave Small can't take up the slack alone.

The result is that I'm trading in my Atari systems for another IBM clone that can be dedicated to college papers, games, and the like, while the first one moves to the bedroom office, dedicated to self–improvement and, er, the occasional game. There's no practical way to fit an additional computer into the budget, and neither budget nor time will be available to support projects on two different platforms.

Besides, if I tried to move another machine into the bedroom my wife's patience would surely be exhausted (even if the space were available, which it ain't).

Atari's Been Fun!

My relationship with Atari equipment began with an Atari 800 back in 1980. I bought it because its graphics and sound blew the Apple II's socks off for significantly less money.

Since then, I've owned at least one of almost every machine made by the company, except for the 1200XL, STe, TT, and Falcon models. Atari computers have been a major part of my personal life for more than 10 years, and ending that phase doesn't come easily. Unfortunately, it **does** seem necessary; I have to be coldly analytical about matters that affect bread on the table, and staying ahead of the unemployment line must take priority.

Wishing Atari Well

I really do wish Atari well in its efforts to succeed with the Falcon. The world computer industry needs the little guys, the niche players with novel ideas and non–DOS approaches to desktop computing. This is where the fresh innovations must arise; the big players in the industry become a little too stiff, a little too conservative, to be reliable sources for radically new innovations. The demise of NeXt and the struggles of Commodore and Atari are not encouraging. I hope they and the others can weather the storm.

In these columns, I've consistently recommended Atari computers as a good value and as the easiest system to set up and use; I can no longer make that recommendation. Although I'm told, as of this writing, that some Falcons have been shipped in the US, there's still little evidence of the commitment to production and advertising that is mandatory if the company wants to increase market share. Perhaps that's the final factor in my decision to leave the Atari user base; I can trade in my systems, and avoid the necessity of tossing the whole investment in the trash can. I'm not completely confident that Atari will make it this time, and can no longer be comfortable with suggesting that people put their money into that alternative.

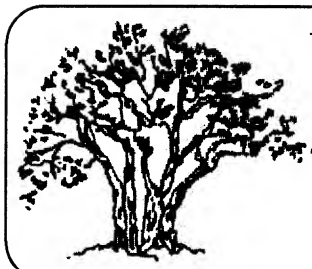
It's never been the equipment; my Atari systems have been more reliable than a lot of IBM clones I've seen fail around me at work. Ease of use has always been a strong point. With its DSP chip, the Falcon is a truly exciting machine whose potential is impressive. I hope it does succeed, and no one will be happier than I if it does.

Atari Users Are the Greatest!

The Atari user community is one of the best groups of people that I've ever known, even though I've met most of you only at the modem and in these pages. An opinionated, cantankerous lot of intelligent and committed people. There's no better user group around. I'll be communicating with some of you via modem on CompuServe, since I do plan to stay in touch. Who knows, if Joe should decide to entertain other platforms in these pages, he may even let me come back with a little bit of a different slant.

So, I'll say *au revoir* instead of goodby. I love you all, and may all your bytes be little ones (of no more than two nybbles).

[Back in November 1988, a long–time 8–bit user bought an Atari ST and, as an ST beginner, explained how to hook it up. Richard Gunter's "Starting Block" column has helped Atari novices ever since. On behalf of all CN readers, ***thank you****, Richard, for all your help and best of luck in the future! – JW]*



Woods Music

by

Gary Woods

Mackie Designs' OTTO 1604

Interview with Rick Vartian

Recently, I had a conversation with Rick Vartian of Mackie Designs concerning their new **OTTO-1604**, that automates their 1604 mixer using MIDI Continuous Controller Data.

Gary–*What portions of the mix does OTTO automate?*
Rick–OTTO has control over all 16 Inputs, the Main Outputs, 4 Stereo AUX Returns, and the Alt 3/4 Bus, which is something you don't have control over in the hardware on the mixer itself. You also have mute control over all of these inputs and outputs as well.

With the first 2 Aux Returns, you have a separate Level Control for the Left and the Right. This way, you can actually do things like crossfading of Reverbs. Aux returns 3 and 4 are stereo but it's a single fader, so that you control the left and right balance evenly, just as with the Main Ouputs. The 1604 has a Left and Right control for the Main Outputs, but the automation has Left and Right strapped together.

One thing about this system is that the faders of the 1604 have nothing to do with sending data to the software. They are normally set at unity gain and left there so that the level accuracy of the automation is where it's supposed to be.

On the OTTO-Mix Software or on a mixer map set at MIDI Level 96, if the faders on the mixer are at Unity Gain, your readings of the mixers output should be Unity Gain. But, because the faders on the mixer still work, if you want to change the relative levels, you can still do that on the mixer's faders. So, that's basically what it controls.

Gary–*What about panning?*
Rick–There's no panning control per se, but by using cross fading on software that provides it, like the OTTO-Mix software, you can set up a cross fade subgroup. To illustrate, by grabbing either the left or the right fader and pulling it up or down, the other fader will track the opposite way. So, you can set up subgroups and do panning left and right in that way, using 2 channels of the mixer.

Gary–*Is there any plan to implement panning?*
Rick–No, the reason we didn't do panning is because you would need 2 VCAs for each channel. We have 28 VCAs in the system now, and the retail price is $849, so you can figure out the mathematics of how much more expensive it would be for that feature. Based on our price range, even though we don't provide AUX Send, EQ, or panning, there is still a significant amount of performance capability with what we are automating.

Through the use of creative grouping, you can pull off a lot of things. For example, some people want to do EQ automation. We're not set up to do that, but by feeding 1 signal into 2 channels using a Y cord, you can EQ one channel one way and EQ the other a different way and simply cross fade one input into the other, thus creating, in essence, an automated EQ chain.

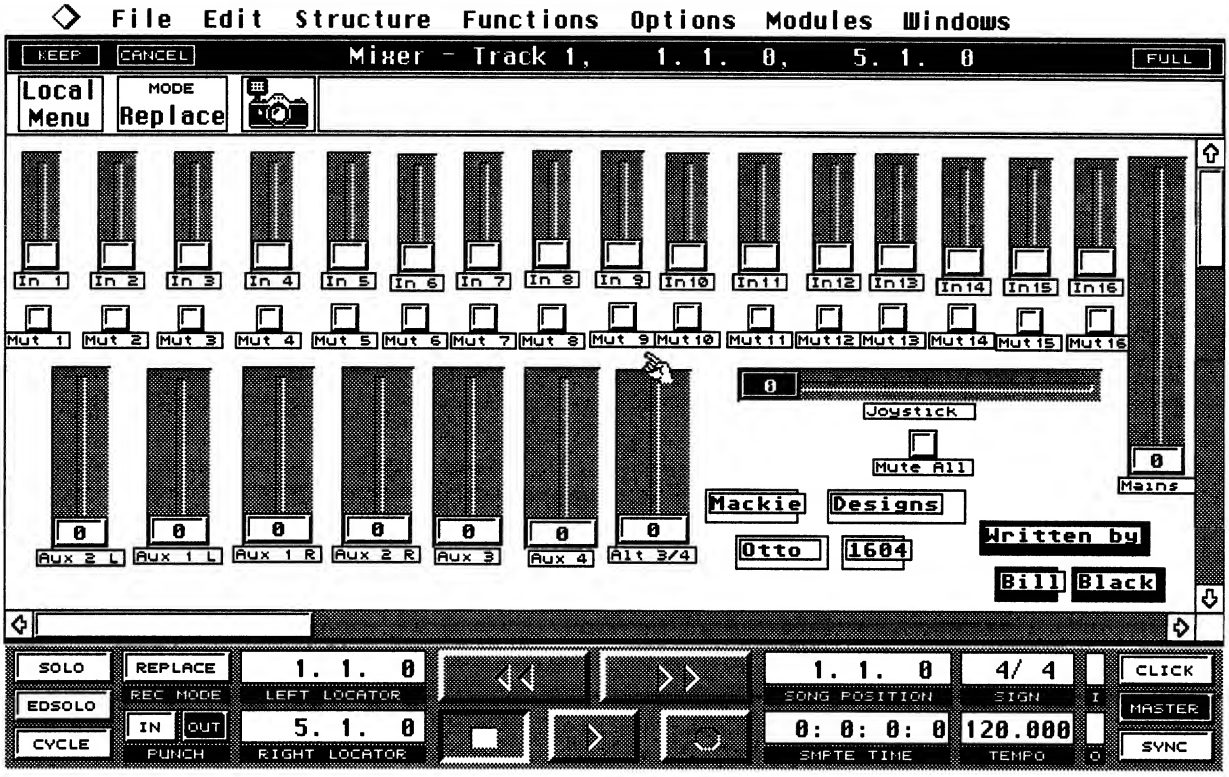
It has a lot to do with how many mixers the customer is going to have. If the user has multiple 1604s, which we anticipate many people will, we're talking about 48 channels of automation for under $6,000 (including the mixers).

Not everyone needs an 8 bus mixer. We have a lot of people interested in that product, but there are plenty of other people that don't want to put out the money. Also, they might not need the 8 separate outs. They're happy with the 1604 setup, and mainly what they want is to be able to group multiple faders and move them with one fader. The OTTO-Mix software that we provide for the MacIntosh does just that, and it can control up to three 1604s simultaneously.

Sequencer developers are going to start putting subgrouping capabilities into their mixer maps. I know that *Notator Logic* will have it, and I'm sure, when the other developers see that feature, they're going to follow suit.

Gary–*What are the component parts of the system?*
Rick–Basically we have 2 pieces of hardware, and a rack plate that come in the package. Also we have the OTTO-Mix software disk. The part that goes inside the mixer we call the Gain Cell, and that is a circuit board within a metal pan chassis. It interfaces in the ribbon cable assembly of the mixer.

Installation takes about 60 minutes or so, and requires only a screw driver. The most involved part of the installation is simply taking the chassis cover off the mixer and then taking the pod and pod cover off so that you can gain access to the ribbon cables. You then unplug the ribbon cables from where they are, and plug one side of the ribbon cable assembly from the pod into one side of the OTTO internal Gain Cell.



Then, there are a set of jumper cables that come out of the Gain Cell into the Main Board. This places the OTTO Gain Cell in between the Pod and the Control Section of the mixer.

Gary–*You feel an average user will be able to accomplish this installation?*
Rick–Yes, the most important thing is to make sure that the 40 pin connectors are not twisted around, that they're flat. Also, they should make sure that all the pins line up both left and right and front to back, and are properly plugged in. If they do that, there's really no way they can do it incorrectly.

We've provided very detailed instructions for how to install it complete with illustrated graphics that were taken from photographs to give an accurate perspective of everything.

Gary–*Have you got a video coming, too?*
Rick–Yes, we are going to do a video on installation. Also, we are going to do a video on some tips about how to run OTTO, as well as showing the software.

Next, we have what we call the External Module, and that's your MIDI interface. On the back, you have MIDI In, Out, Thru, and also an 8 pin mini DIN female jack, that plugs into the Gain Cell. On the front of the box we have another 8 pin mini DIN so that the user can either plug into the front or the back of the module depending on how he wants to use it.

On the front of the box there are 4 buttons. The 1st button is called Learn, the 2nd Snapshot, the 3rd Mute, and the 4th Bypass. The Learn button is designed to allow a user to teach the Continuous Controllers to OTTO.

Let's say somebody is using a JL Cooper fader package, or a Mixer Map off of *Cubase*; all he needs to do is simply tell OTTO what the first controller is. To do this, you push the Learn button, and the LED flashes showing that it's waiting for a command. Then, you take the 1st channel of your mixer map and move the fader all the way up to the top of its' throw and pull it all the way back down. The LED will flicker, showing that it's receiving MIDI data, and then it will stop flashing, indicating it has learned that controller. After learning the 1st controller, it maps out all the other ones so you don't have to map every single channel manually. The next thing to do is learn the mutes; and it works exactly the same way. Also, the Learn Light always functions as a MIDI activity light.

The next button is Snapshot. There are 80 snapshots that can be loaded into memory. These snapshots are designed to save fader positions. The OTTO-Mix software can remember Mutes, but the hardware remembers only fader positions. It's not that big a deal; you just don't have an actual Mute button it remembers.

A great feature is that OTTO can be told to change from one Snapshot to another in from 0 to 30 seconds. To engage the feature, all the user has to do is send a MIDI note on the same channel as the OTTO hardware and push that note On and Off for the amount of time he wants the fade to take. Then, when the Program Change is sent to OTTO, it will change to the new Snapshot in the assigned number of seconds. So

what it means is that people in a live environment can use this in a performance to set up snapshots and simply call them up with a Program Change command from within a sequence. Then, let the hardware move the VCAs, rather having the computer run them.

The next button is Mute. The LED of the Mute button flashes On and Off when there's a mute engaged on any channel, like the Solo Button does on our mixer. The button itself acts as a Global Mute On/Off. If you push that button, it shuts everything off.

The last button is a Bypass button, and what that does is Resets all the levels of the OTTO system to Unity Gain. Also, it takes the module out of the loop so that it no longer responds to automation.

Because of the quality of the chips in the Gain Cell we can get an attenuation spec of -88dB, which is about 10dB better than the mixer is without OTTO inside. The dynamic range of the component is better than the mixer, the signal to noise is better, its THD is slightly better and, as you know, the 1604 has got really good specs already. As a result OTTO is transparent, actually improving the specs of the original mixer. Also, by the use of a logrithmic taper we employ, the fader performance of OTTO is actually superior to that of the 1604. The mixer becomes a mini 8 bus in terms of its fader personality.

Gary–*Why is this better than just using a MIDI Volume Control?*
Rick–My question to those who ask that is, have you ever been able to get MIDI Volumes to sound good on sine-wave-like sounds like flutes? You will notice they are very "steppy," that's really the major difference. With OTTO we're moving in 1/2 dB steps using a smoothing algorithm. If you're moving from point A to point B rather than jumping from 1 MIDI number to the next, we are gliding through. The Gain Cell components, like the DBX chips we're using, have unlimited resolution. We're required to stay within the 8 bit spec of MIDI so it has 127 steps, but the VCA itself can be glided between numbers. That's what our smoothing algorithm does.

Gary–*What are some of the sequencers OTTO works with?*
Rick–OTTO will work with any sequencer that is set up to run Continuous Controllers. Generally, what it boils down to is, which sequencers have virtual faders in their architecture? Some that do are *Cubase* for the Mac, the Atari and, soon, for the PC, *Notator,* and *Notator Logic*, which is due for release in May or June of this year. Also, *Notator Logic* has gone so far as to include Subgroups of mutes and faders on its mixer map. For the PC, there is *Cadenza for Windows,* which has the required 24 faders. Also, you can use it with *Cakewalk,* but it only has 16 faders. That doesn't mean you can't use *Cakewalk* with OTTO, it just means, if you want to control multiple channels of the board beyond 16, you're going to have to remap those virtual faders to a different controller number. Also, Opcode's *Vision*, and Mark of the Unicorn's *Performer* and *Digital Performer* work with the system. All of the developers are taking a hard look at their mixer map support, now that OTTO is coming out.

Gary–*What are the features of the OTTO-Mix software, which runs on the MacIntosh and is provided with the package?*
Rick–As we developed the automation hardware, we quickly discovered that there wasn't anything on the market that could totally support a product like this; so we decided to tackle the software design ourselves. I contacted Steve Ellison of Ellisonics. He's done some stuff for CM Automation; he just finished a deal with Lucas Film, worked a lot with theatres designing theatre control software, and he developed a control software product for the NECAM System. I met him through CompuServe, and, through Steve, I met Carl Malone, who later came on the OTTO project.

Mackie Designs and I laid out the front end of the software, determining where everything was going to be. We also put our art department to work designing all the front end graphics. The major difference between our software and a lot of others out there is that we're using 8 bit color graphics. The only drawback is it takes 4 MBs of RAM to run and it's kind of picky about the machine it's on. It needs a high end processor, something like a IIci or faster. Apple is headed in the direction of faster processors at a more reasonable price, so the price factor will not be an issue for very long. But for right now, your graphics will be a little bit sluggish on a slower machine, in comparison to what's going on with your MIDI automation. I want to stress that, even though the graphics may be kind of jumpy, the control of MIDI data going to the hardware is not.

The more you get familiar with OTTO-Mix, the more you will find that you don't need to look at the graphics constantly; it's just to keep track of a relative position. So it doesn't become as big a deal as some people might think.

The most important part of OTTO-Mix is that it's dedicated to OTTO; it's designed for this one product. The 8 Bus software will not be the same, similar, but not the same. It is designed to be shown on a 13" color monitor, and is not resizable. If it's run on a black and white system, there are specifically designed black and white graphics. In fact, if you run in 1-bit black and white, you save yourself about 350K of memory and the faders are a lot faster.

The most important feature of OTTO-Mix is its ability to subgroup Faders and Mutes into sections. Also, OTTO-Mix can cross group as many as three mixers so that you can set up a subgroup on one mixer, switch screens to another, select faders there, go to the

third, select more faders, then end the group. Now you've got all those faders scattered over three mixers placed into one subgroup, and, if you grab a fader on any one of the three screens, they all move in relationship to what you're doing. You can do the same thing with mutes.

There are 2 types of subgroups in the fader section. First, there are Unscaled Subgroups, and what that means is that the Faders can be grouped in relative position to each other so they keep their spacing as they move up and down in the same direction.

The other kind of subgroup is called Scaled. To use this, first select Scaled, then click at the top of the screen for the top of the fader travel and pull it all the way down to the bottom, while holding the mouse button; then let it go. For the next fader, click at the bottom of the fader travel, hold the mouse button down and pull that up to the top; and, then, end the group. Now, as you pull either one of the faders down, the other goes up. You could also do multiple crossfades, like having 3 stereo pairs in one big crossfade group.

When you group anything, the group becomes a color. We have six colors and six numbers. So, for instance, you'll have Group one, which is Red, and Group two, which is Blue, etc. When you get past six, the numbers and colors start repeating themselves.

With the mutes, we have Unscaled Mutes, which means all of the group is On or all of it is Off; and we also have scaled Mute Groups. This would allow you to turn On one group, which would turn Off another group. Using that in combination with a Crossfade Group, you start to get the picture of how exciting this program can really be.

Gary–*Are you able to piggy-back OTTO-Mix with any other software?*
Rick–OTTO-Mix is OMS compatible; it's also MIDI Manager compatible. MIDI Manager allows the user to keep two programs open and running while one is in the foreground and the other in the background. One trouble you might run into is that OMS occassionally has problems running two programs simultaneously. We're trying to get OTTO-Mix to be as foolproof as possible, but there's a possibility that some of the sequencers might not run stably on OMS. It doesn't matter that OTTO-Mix is the other program, it just means they don't run stably on OMS. At the moment, we recommend MIDI Manager for the most stable operation.

Gary–*What is the optional OTTO Fader Pack?*
Rick–We're still in the planning stages for the product, and we don't have a release date yet. If all goes according to plan, we should be able to get it out by the end of the year. The name is going to be OTTO-Pilot and it's going to be composed of 24, 100 mm faders corresponding to the 24 faders on OTTO-Mix. It can also be used with the 8 bus automation. Our goal with OTTO-Pilot is to allow as much control as we possibly can. Details on OTTO-Pilot will be released this year.

Gary–*What about OTTO and the 8 bus mixers?*
Rick–There is going to be a completely different hardware package for the 8 bus, and a completely different rewrite of the software. It will be composed, most likely, of 8-channel automation cards that will install into the 8-bus chassis. What you'll be getting with this package is control of all input faders, aux returns, 8 submasters, and the master fader. We'll have mutes on all channels; and, in addition to that, we're working on getting it to have mutes for the Mix B monitor section. Also, the snapshot memory will be bigger.

Gary–*Anything you'd like to add?*
Rick–Within a few months we're going to be producing a new 1604 product called OTTO On Board, which will be CR-1604 with a factory installed OTTO. We'll also do the same thing with the 8 bus. We're really excited about the product, and we hope everyone will get behind it. This is the first in a series of MIDI Automation products from Mackie Designs, and we're planning to offer MIDI automation as an option on any product we make over the price of the 1604.

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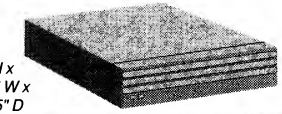

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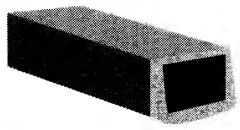

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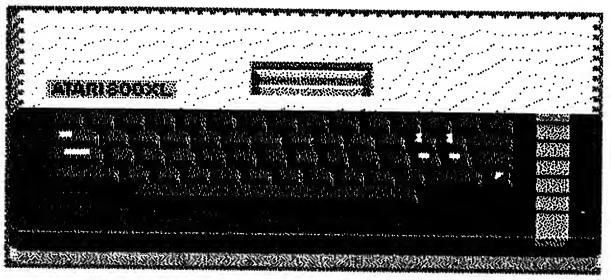


Moving Again?

By the time you read this, I'll be back in California for a short stay. After that, it's off to Northern Virginia for another five month school. Thank goodness this 8-bit beast is portable. In the meantime, send your letters to my California address (listed in the front of the magazine). My wife will forward things to me until I get a better address. I'll still be hooked up to GEnie, CompuServe and, hopefully, FidoNet as well.

Elsewhere in This Issue

Frank Walters provides the third part of his series on TextPRO macros. I've learned a ton about TextPRO while editing his material and trying out the examples. I can tell you from personal experience, my "fear factor" of macros has gone down considerably thanks to Frank's effort. Frank has proven to be quite a prolific writer and I now have a slight backlog of articles from him, which I'm sure will please everyone.

Bill Mims joins us again from the frozen wastelands of North Dakota with a short review of Computer Software Service's *Hard Disk Back Up Pro*!

Wes Newell tells us how his memory upgrades work in this issue. Wes really needs no introduction, being an Atari 8-bit pioneer.

Lastly, Kevin Packard provides us insights into the much acclaimed, yet never fully realized, *Diamond Graphic Operating System* (GOS). This is Kevin's first appearance in *Current Notes*. He bought his first Atari back in 1982 and works as a research technician. A dedicated computer hobbyist, Kevin first cut his teeth on punch cards. He's a member of Western New York Atari User Group. I'm not sure how many of you out there have a *Diamond GOS*, but we'll see how much interest this article generates.

What's Out There for Diamond GOS?

One of the reasons I'm running the article on *Diamond* is that I've had one of those little cartridges lying around the computer desk for quite sometime. Like many of you, I waited with great anticipation for the birth of Total Control System's product (which never happened) and finally ReeveSoft's entry into the fray. I even bought an ST mouse and mouse pad before receiving the cartridge.

I actually use my *Diamond* every once in awhile. Several people, including Kevin Packard, have written several interesting applications for *Diamond*. I recently searched the GEnie and CompuServe 8-bit libraries and here is what I found:

CompuServe's Diamond Files

Lib 10	TILES.ARC – 15 block tile game like you had when you were a kid.
Lib 4	VIEW83.ARC – Updated version of View8.APP that uses the Cartridge File select routine and looks for files with the extension .GR8
Lib 6	RECORD.ARC – Accessory that will bring background music to most .APP programs.
Lib 3	DIRPRN.ARC – Diamond Accessory to print disk directories from the desktop.
Lib 3	DMENU.ARC – Load basic programs using the built in file selector.
Lib 10	MIXMAT.ARC – Mix n Match is a game of concentration. Really neat!!
Lib 5	JACKET.APP – Application that reads your disk directory and prints it to an Epson FX (R) compatible printer.
Lib 5	DIACHE.ARC – A check writer program.
Lib 3	SDUMP2.ARC – Screen dump accessory.
Lib 4	VIEW8.ARC – Program that will load graphic 8 screens for viewing.
Lib 14	MENUDE.ARC – Menu demo

GEnie Diamond Offerings

4808	ACCMAKER.ARC – Diamond GOS Desk Accessory Maker
4859	AXLON.ARC – Axlon Memory Drivers for Diamond
5360	CHECKNEC.ARC – Diamond Checkwriter for a NEC 8023A
4118	DAMAKER.APP – A Desk Accessory Maker
4552	DIABASIC.ARC – Program via Basic
5345	DIACHECK.ARC – Writes and print checks
5337	DIAJACKET.ARC – Lists disk directory to your printer
4450	DIAMOND.ARC – Diamond utilities disk in ARC format
4821	DRIVERS.ARC – Diamond GOS Input Drivers
4469	DRIVESET.ARC – Corrected diamond drive set applications
4809	FONTEDIT.ARC – Diamond GOS Font Editor
4914	FONTZ.ARC – 22 fonts for Diamond GOS
5359	JCKTNEC.ARC – Prints disk directory on NEC 8023A
4045	OSSTODOS.BAS – SpartaDOS Run Address appender
4819	PAINTSRC.ARC – Diamond Paint Source Code
5352	PRINT.ARC – Diamond Write Printer Driver Source

4858 RAMBO.ARC – Rambo/Newell 256K Memory Driver
5275 SDUMP.ARC – Diamond GOS Epson Screen Dumper
4050 STMOUSE.DRV – Updated Diamond GOS ST Mouse Driver
4550 SXFORMAT.ACC – SpartaDOS X Format Accessory
4890 VIEW8.ARC – Graphics Mode 8 Picture Viewer
4498 XON.BAS – SDX utility

Dorsett Says, "Hello, Again!"

Remember the Remington shaver commercial with Victor Kiam? "I liked it so much, I bought the company." Well, that's just what Dave Peterson did with Dorsett Educational Systems. You will recall that I reported back in my very first column (March '92) that Dorsett was going out of business. Dave has rescued Dorsett and brought it to California.

The full 8–bit product line is available. That's about 1000 programs. Each program series of 8 cassette tapes is available for $59. Dave is offering a special deal of three programs for the price of two. Courses range from "English as a Second Language" to "Theory of Semiconductors." Dave is refocusing Dorsett towards inner city education as well as retraining displaced veterans who have become casualties of the Defense Build Down. (A topic close to my heart.) He is also porting the old programs to the IBM and Macintosh, which entails building an RS–323 tape recorder interface for each of them. Dave noted that the Atari 8–bit is an especially attractive device for this type of work since it is inexpensive, easy to operate, self contained and already has a nice analog sound storage device. The Atari 8–bit is the ultimate tutoring machine. Eventually, he'll move to CD–ROM, but that gets expensive. Dave feels his efforts have great public service potential.

To obtain a catalog or further information, please contact Dorsett Educational Systems, 408 Mission Drive, Camarillo, CA 93010. Voice (800) 654–3871, FAX (805) 484–3327.

Another Update on TextPRO Version 5.0

Work to "finish" version 5.0 continues, albeit slowly. Ronnie Riche has transferred the source code to John McGowan who is going to try to write an example "add–in module" along with the accompanying documentation for the user's manual regarding that feature. The rest of the manual has been consolidated and updated. It will be sent to yours truly for proofing and sanity checking. I may call upon a few other sets of eyes to make sure everything is truly clear in the manual. When John finishes his section on the "add–in modules," it will be merged into the rest of the manual. John will probably make a few other minor fixes to the program as well. When this is done and the manual is finished, we'll release the program and documentation.

TextPRO Macro Errata

A few typos have crept into Frank Walter's TextPRO macro tutorials. In the April issue in the first column on page 41 in the last paragraph, the "ij" before "Macro" and before ".MAX" should be opening quotation marks ("). In the May issue in the second column on page 42 a little more than half way down the "s" before the "‹=›" should be an "at sign" or @.

GEnie Expands Its Internet Connection

GEnie has just added a separate Internet RoundTable, with a staff of experts, hundreds of informational new files, and many new features. Within the Internet RoundTable you will find discussions and files related to the Internet, Usenet News, FTP (File Transfer Protocol), Electronic Mail, and Networking, even for our Atari 8–bit machines!

The new RoundTable has the standard GEnie Library of files to include Usenet digests for many news groups. (The Atari 8–bit news group digest isn't there as of this writing, but perhaps we could stimulate interest to add it! The ST Digest is there, though.)

The RoundTable menu also shows options for ordering files and directories from the various "anonymous FTP" servers on the Internet. The SysOps will search out a file for you on the Internet. They'll get it and upload it for you. There are no extra charges beyond the standard GEnie prices for this service. You do not need to be registered with the Internet Gateway on page 207 in order to use these services.

I attended the opening night Real Time Conference on 11 June to see what was happening. I found quite a number of computer gurus, including Andy Finklestadt (ANDY) who's helped me in the past with my GEnie/Internet travails.

The Internet RoundTable is found on page 1405, keyword INTERNET–RT. Be sure to check it out soon!

Best Products Clock Module Update

I spoke with Brad Koda this past month and the R–Time 8 clone has run into some snags with their British programmer, so the software task has been transferred to Poland. I'll keep you informed as things continue to develop. No estimate as to when this project will be complete.

More Books on the Internet

There are two new books out on the Internet that may be of interest to you. I've checked out both from the library and am pouring through them. The first is being reviewed right here in *Current Notes*. But I know that some of you don't always look at the other fine articles in this magazine, so I'll mention the title and pertinent information here. The first book is entitled, ***The Whole Internet User's Guide and Catalog***, by Ed Krol, O'Reilly & Associates, 1992. The sec-

ond book is called, ***The Internet Message***, by Marshall T. Rose, Prentice Hall, 1993. ***The Internet Message*** is quite a tome and chock full of technical detail for you budding computer techno-geeks. Hopefully, you'll read the review elsewhere in *Current Notes* on Ed Krol's book.

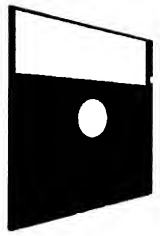
This reminds me of something else. Many of the non 8-bit articles here in *Current Notes* are, in fact, useful to 8-bitters and I encourage you to browse through the rest of the magazine. I find the CompuServe and GEnie monthly reports particularly useful, since those services operate essentially the same for all computers, when using "command mode" (not CIM or Aladin).

Where Are Those 8-bit Photos??

What if someone had a contest and nobody entered? Well, no one has sent in an 8-bit related photo for the cover of *Current Notes* yet. Hopefully, some enterprising shutterbug will send in an Atari Classic photo soon.

That's all for this month. You can contact me via the snail mail or e-mail addresses listed at the front of the magazine.

★ ★ ★ ★ ★



HD Backup Pro!

(Version 1.4)

Now MYDOS Users Can Back Up Their Hard Drives, Too!

Review by Bill Mims

Have you ever wondered what happened when a hard drive corrupted? Well, the smart user would have looked ahead and got a backup program. What does a backup program do? It does just exactly what it says, except that there are not that many 8-bit backup programs out there. (See "Backing Up Your 8-bit Hard Drive," by John Sandgren in the Jul/Aug CN for a list of what's available.) Back up programs are for the experienced user only, so don't think you can just put it in and run it. It doesn't work that way!!!

Computer Software Services (CSS) has an excellent backup program called *HD Backup Pro!* I just got version 1.4 from Bob Puff and it is super. Now you ask, "What about the public domain versions?" They are nice, but they *only* work with *SpartaDOS*. Not that *SpartaDOS* isn't nice, but what about *MYDOS*? Well, Bob Puff did a bang up job with *HD Backup Pro!*

Loading HD Backup Pro!

HD Backup Pro! will only load from floppy. That means DO NOT copy it to your hard drive. If you do, it simply will not work. When I got my first version (1.3), I could not get it to work. I loaded it and started my backup. There is a portion of the program where you need to format the backup disks. The program would give an error of "DEVICE NOT RESPONDING" right off the bat. After I called CSS and talked to Bob, he immediately started working on the problem. I was the first person to try version 1.3 with stock 1050 drives. After a couple of phone calls, Bob F-MAILED me a corrected version. This version corrected the bug, but a few more were uncovered as a result. Version 1.4 appears to be bug free.

First Menu

The first menu you come to is the selection menu. You have a choice here as to whether you are doing a backup or restore. Picking "1" will run the backup program, and give you the first menu. You are first asked which drive to backup? Simple, huh? Next, is the destination drive or drives. If you have more than one floppy, you can select all of them at this time. Drive selection is done by using the arrow keys then hitting the space bar to toggle them on or off. Hitting [RETURN] will set the drives to the program.

Real or Simulated? Now you have an option. Do you want to do a real or simulated backup? If you choose simulated you will just "simulate" the backup. During a simulated backup, the files and disks needed for the real backup are calculated so you know how many disks are going to be needed. This choice is really handy so you don't start a backup without enough floppies.

OK, now you want to do a REAL backup. First, reboot the program off the floppy. Make the choices up to this point. Now choose "real" backup. If you use a Black Box as I do, here's one *very* important thing about booting up the backup program. You *must* reset your drive numbers. Here's why. Since you need to set a floppy as drive one to boot up *HD Backup Pro!*, the Black Box menu drive 1 must be a floppy. Before you start backing up, switch the drive menu back to normal *or* choose the appropriate source for the floppy you switched for. Either way will work, but don't try the second unless you know, absolutely, what you are doing.

Backup Type This option dictates the type of backup. The selections (ALL/ARCHIVE/DATE/VOLUME) give the user a variety of options. The first three will do a file-by-file backup. *MYDOS* does not directly support the archive bit feature; however, it has been emulated by using one of the unused bits in the directory entry. When the date selection is made, no *MYDOS* emulation is possible. It will be treated as if you selected ALL. Selecting ALL does the obvious. It backs up all files on a file-by-file basis. If you select archive, then the files will be compressed while backing them up. One word of caution here, though. When you back up an already compressed file, it actually will use more space than a non-compressed file. I don't know the compression mechanics here. All I can tell you is that, through conversations with Bob Puff, I've learned compressed files, for some reason, actually come out larger.

PATHSEL With this option, you can choose which directories can be chosen for the backup. In case you select ALL here, then all the files on the selected drive will be backed up. Under "selected," the program will first scan the drive and then prompt you for the directories on the drive. You then select the directories to backup. Again, very simple.

ARCSET This controls the update of the archive bit. If a file backup is being performed, and this op-

tion is set to yes, after the file has been backed up, the bit will be updated. During a simulated backup, the archive bit will not be updated. Selecting "no" here means no archive will be done, so the bit will not be updated.

OUTFMT This option is ignored if a simulated backup is done. After all, can you format a simulated disk? If you can, let me know how. I would really like to try it. The format of the output device is controlled here. If you are using floppies, choose FastFmt. The disk will be formatted physically later. If you are backing one hard drive to another, choose DosFmt. I use floppies and the FastFmt option.

DATCOMP This option turns data compression on or off. I don't turn on the compression because of the time required for the compression. If you do choose this function and you have a 130XE OR 800XL, your computer is tested for sufficient RAM. If you have bankable RAM, you can enable this option. Otherwise, you can't toggle this option. Using compression will save about 30% space on disks, but it will take a *lot* longer to do the backup.

DMA This command is the ANTIC chip option. It controls whether or not the screen stays on during execution. Turning the screen off during compression will speed the program, and, if an error happens, the screen comes back on with the error. This option is ignored if compression was not enabled.

VCR Although this function is listed, it does not work at all. I asked Bob about this. Originally, it was thought that an add-on to the Black Box would make this function possible. However, the added expense did not make it feasible to do so.

CATLG While doing your backup, you need to know what is being backed up. The four options (NONE/DISK/PRINT/BOTH) are very good. The option of NONE gives no catalog. If you choose DISK, a file will be written to disk. You can also select the disk to write to. PRINT will give you a hard copy, file by file, of the backed up files. I *strongly* suggest using this option, since you can just pull out the printout and know which files you have backed up. BOTH will give you a hard copy as well as a soft copy. All three options let you specify the device, such as disk drive or printer number.

Are We Done, Yet?

No, we aren't done yet, but it's pretty close. After setting up the main commands, hit [START]. The Format menu screen comes up now.

Format Menu This menu has several options and is set up for numerous drives. Several improvements were made here. Several drives have been added for more versatility. The first selection you need to make is density. The program has at least six different densities, including single, enhanced, and double. If you have an 80-track drive, it must be set to double. No choice on this one.

Tracks Very short and simple, just enter the number of tracks. As mentioned above, the number of tracks *must* be 80 if you set the density to double.

Sides Owners of drives like the XF551 have an advantage. If you have a drive with more than one read/write head, then set the number of sides to two. Owners of 1050's and Indus GT's are just out off luck and only have one choice.

Use Skew Do you have a drive capable of using high speed sector skew format? Then set this option to YES. High-speed SIO routines have been implemented and will be used regardless of the parameter. This is only for the format command. Owners of the non-upgraded (CSS upgrade) XF-551 need to set this command to NO.

Action This option tells the program to do either one of two things. Using the REUSE command causes the program to update only certain fields. It does not do a full format here. FORMAT will format the disk to the selected settings. If any errors are detected while formatting, you will be prompted for another disk. This is where I ran into problems with version 1.3. While I was formatting disks, the program gave the error: DEVICE NOT RESPONDING. While giving this error, the floppy would still format. Bob fixed this problem with version 1.4. Thanks, Bob!

Mode This toggles the automatic format command for the disk drives between AUTOMATIC and MANUAL. In the AUTOMATIC mode, the drive selected will format automatically and continue backup. In the MANUAL mode, it will prompt you to replace the disk and continue with the backup. I have three floppy drives. I set the first floppy to manual and the other two to automatic. When drive one is done, it automatically switches to drive two, formats and continues the backup. After drive two is finished, it repeats for drive three. When drive three is done, the program returns to the menu and prompts me for a fresh disk.

Dad, Are We There, Yet?

Yes, we are *finally* ready to start the actual backup. After all the above settings are completed, hit [START]. You will come back to the main menu once more (the first menu). If you wish to save these parameters, then hit "S" to save the settings. If not, hit [START] again. Now the actual backup starts.

The program now reads all directories on the selected drive. Only the source drive is scanned here. Once the source drive is scanned the actual backup begins. If you have a lot of files, go get something to drink, eat, whatever. It does take some time. If you have multiple drives setup like I do, sit back, wait until prompted for fresh disks and let it go.

We're Done!

At last! We are done with the actual backup. The last step of the backup is the most important one. After the last file is backed up, the program will prompt you for disk #1. This is to write important directory information to the disk. DO NOT mix your disks up.

Some people think that a backup is not required on a hard drive. I ask them, "Have you ever had data on a hard drive become corrupted for some reason?" If so, then YOU will understand the definite advantage of a backup. I find the program quite extensive and very good. It is easy to run and understand. The docs are very well written. I would give the backup portion A+ in every instance.

Restoring the Hard Drive

Restoring a corrupted hard drive can be a real hassle. Once files are gone, they are gone, right? Wrong!!! If you used the backup program, then restoring the files is just a bunch of disks away!! Load the Backup/Restore disk as you did with the Backup program.

The main menu prompts you for a source and destination drive. After selecting these drives, just follow the prompts and the drive will be restored. One very important note here. The restore program looks for the floppy drive. No matter what the drive number is, you can, and probably will, get an error. Let me explain this. Let's say you have a 1050 drive and have the drive itself set to drive 1. Your Black Box menu has it designated as drive 6. As far as the Black Box is concerned the 1050 *is* drive 6. The restore program, however, will not recognize the drive because the drive is physically set to drive 1.

How does one solve this dilemma, you ask? Well, take the Black Box menu and change drive numbers to where the menu and physical settings match. Now with the drive numbers changed, change the source/destination in the restore menu. This will route the files to the right hard drives. I feel there is not enough documentation on this part, but the experienced user can quickly figure it out.

With all this info, do you feel it's worth it? Well, if you own a hard drive consider this. *HD Backup Pro* is the only backup program that is *MYDOS* and *SpartaDOS* compatible. It is easy to run, and runs consistently well. It tells you how many disks you need. You get free updates as Bob updates the software. Yes, I believe it is worth it–very much worth it.

HD Backup Pro! is available for $49.95 plus shipping and handling from: Computer Software Services (CSS), PO Box 17660, Rochester, New York 14617. Phone (716) 429-5639 10am-5pm ET; FAX (716) 247-7158; CSS BBS (716) 247-7157 (300-9600 baud).

Today's Tagline: July, the only month in history with no snow in North Dakota!

A Diamond in the Rough

by Kevin Packard
CompuServe: 71777,23

Question: How do you stop an argument between *MyDOS* and *SpartaDOS* users about which is the better DOS?

Answer: Mention *Diamond GOS*.

Well, at least they will stop long enough to give you a dumb look. If you're lucky enough to be acknowledged, you're going to hear things like "It's slow," "It's buggy," or "It don't have no software."

To which I simply reply, "So, what's your point?"

What Is Diamond GOS? The *Diamond GOS* by ReeveSoft is a Graphic User Interface (GUI). Something like what you see on the ST, Mac, or IBM running *Windows*. Drop down menus, dialog boxes, windows, mouses and the rest of the usual GUI stuff is included.

What a GUI does is creates a standard way of interfacing computer programs with people. Whenever you use a *Diamond* application program, you will always know that the menu bar will be at the top of screen, that moving around in a window will always be the same, and that clicking the mouse on objects will give expected results.

I have a lot of respect for what Alan Reeves was trying to accomplish when he wrote *Diamond*. A GUI for the 8-bit Atari would have been a simple task if everyone used the same 8-bit Atari, with the same DOS, with the same mouse input device, with the same disk drives, and with the same amount of memory. We all know that this is not the case. *Diamond* was designed to deal with the diversity of setups by using programmed handlers for the mouse devices and extended memory. A joystick, Koala pad, or ST mouse could be used to move the mouse pointer around on the screen, depending on which handler was loaded with the configuration program. Much of the input is done moving the mouse pointer around the screen. The device you choose will have a great effect on your initial impressions of *Diamond*. A joystick works fine, but pointer movement is slow and tedious and you feel like you're playing a game. To me, the ST mouse is much faster at moving the pointer around the screen and improves the general feel of *Diamond*. This may be somewhat of a subjective statement on my part.

Several memory drivers are available and can be loaded in the same way. I have heard that there were problems with some of the memory handlers, but the ability to write your own handler to fit your system's needs gives some leeway to those who want to tailor their system.

The *Diamond GOS* Desktop is the graphic interface between you and the DOS of your choice. For Atari *DOS 2.x* users, it replaces the DUP.SYS file with drop down menus, icons and windows that would normally be the menu options. For *SpartaDOS* it replaces the command line, but still gives access to a command line buffer. It should run on top of most DOSs, but each DOS uses memory in its own way and conflicts can occur.

My system consists of a stock 130XE with TransKey, two off-the-shelf 1050 disk drives, and an ST mouse running with *Atari DOS 2.5*. The fact that there is nothing special about the system may have kept my initial frustrations to a minimum.

What Is Diamond GOS? Really. *Diamond* is a 64K bank-switched cartridge. The cartridge is the same type used by *SpartaDOS X*, *R-TIME 8* and the *Espress!* Cartridge. It's "stackable." The cartridge is full of machine language subroutines (functions) and the desktop program. Most of what the desktop program does is call these subroutines to get the graphics to work. There are 55 functions in version 2.0 and 57 in version 3.0.

Finding and using these functions could have been made difficult if it was left up to the programmer to do the bank switching and locating of functions. *Diamond* has one routine that will do this and it's the only Diamond routine that a program will have to call. Get the function number into the accumulator of the 6502 chip and jump to the routine at location $8E00. (That's USR(36352) in BASIC). Of course, some of these functions need information or pointers to where they can find information. These are set up in specific memory locations before the call to *Diamond* is made.

The Desktop and most of the application software uses the high resolution graphics 8 screen. Everything that is put onto the screen has to be poked into screen memory; and if windows, icons, or dialog boxes are going to cover something up, this information has to be stored in case something gets moved. Moving the byte data in and out of screen memory has a tendency to slow things down.

Because each character has to be drawn on the screen, *Diamond* has routines that will manipulate

the font data. Imbed the control codes within a character string and the font can be resized, inversed, bold, outlined, underlined, and/or italic.

Diamond fonts don't have to be the normal 8 by 8 bit fonts. A Diamond font contains header information to define the number of bits high and wide the font is. This is what made the 80 column mode of *Diamond Write* possible.

Software *Diamond Paint* and *Write* were rather disappointing. Both were attempts to use the Diamond environment but fell short of being usable. The slow screen redraws of *Diamond Write* and the bugs in both programs made them undesirable for use. Each program did have special functions that made it unique and in special circumstances may make its use advantageous.

There are several programs that can be downloaded from CompuServe or GEnie. I know of at least two games and accessories. There is a check writing program and a disk directory printer. If you have *Diamond*, you should take the time to check them out. [Editor's Note: See my column this month for a list of what's available.–RR]

Diamond does have the ability to run a lot of software. When loading Machine Language programs from the desktop, *Diamond* will examine the file extension and determine its course of action. If the file extension is .APP or .COM, *Diamond* remains active and the programs can use the environment. APP files are application files designed to work with *Diamond*. If the file is an executable program with a different extension, *Diamond* will kick itself out of the system and free up the RAM normally used by the cartridge.

What determines if a program is runable from the desktop is whether the program needs the portion of memory were handlers and system variables are stored. If this memory is disturbed, jumping back to the desktop will send the computer into la-la land. The only course of action with this type of program is to run the program from the desktop and then reboot. If this memory interferes with the program, then there isn't much you can do short of removing the Diamond cartridge.

Atari BASIC programs suffer from the same fate, but there are so many more of them that finding the ones that work with *Diamond* in the system is easier. The real hassle is not being able to load the BASIC program from the desktop. This problem has been solved with the application program called BASIC Loader (BASLOAD.APP). This program will create an ML routine that will autorun a BASIC program when you QUIT the desktop. It's not as direct as double clicking on a filename but much more convenient then typing the RUN command every time.

Support and Availability Very little and quickly approaching none. Support from ReeveSoft ended a couple of years ago because of poor sales and having to cope with the diversity of computer setups that were incompatible with *Diamond*. With the owner base so small and the user base ever smaller, the effort to program applications is a non-profit endeavor.

The only way to get a *Diamond GOS* cartridge is to buy one used from someone else. The same goes for the other ReeveSoft programs.

What Works When I got *Diamond*, I, too, was disappointed in what it wouldn't do. I finally made the realization that the 8-bit with *Diamond* was a different computer from the 8-bit without. It became apparent that expecting *Diamond* to work the way I wanted it to was like asking an IBM to run my 8-bit software.

Now, when I want a laid back computer session and I can do what I need, I'll boot up with *Diamond*. Any other time, I'll boot up my standard system or use my ST.

As Diamond software that will do the things that my standard Atari will do becomes available, I'll start to use it. Slowly, the *Diamond* sessions will increase in length. But make no mistake, if you are into a power-user mode, *Diamond* will never replace your usual DOS.

Programming *Diamond* The only programming information that I have seen is the *Diamond* Developers Kit. This contains the basics needed to program the *Diamond* environment, but it's like reading a beginners guide for experts. Not only is it important what the kit says, what it doesn't say is also important. It's like trying to learn Atari BASIC with the manual that comes with the computer.

At this point, choosing a program to write should be no problem. With such a limited number, a program that will do anything would be of great interest. The problem isn't what to write, it's what to write first.

Last Thoughts I didn't cover any subject in great detail because, to tell you the truth, I'm not sure who out there is interested in this clever cartridge. I'm not sure how many people have *Diamond* Cartridges. There *could* be other people out there who have discovered the secret of *Diamond* and are not sharing it.

I am sure that I will continue to use and program my *Diamond* system when time is available and the mood hits me. You'll just have to check the file section when you're online to see what's new. If you are a closet *Diamond* user or programmer and want to "come clean" *or* if you just want to chat about *Diamond*, please drop me a line on CompuServe (71777,23).

Memories of Sally

How Do Those Newell Memory Upgrades Work, Anyhow?

by Wes Newell

This is about memory, and memory expansions for the XL/XE line of Atari 8-bit computers. Hopefully, after reading this, you will have at least a vague idea of what's going on inside that little box.

I'm sure everyone knows that the 8-bits are based on the 6502 CPU. It has an 8-bit data bus and a 16-bit address bus, thus allowing it to pull in 8 bits (1 byte) of data at a time, from 65,536 memory locations. So, how do we get more memory than that in the machine so the CPU can see it? Well, the most common method, and that used by Atari in the 130XE, is by using some sort of memory control unit. So, before we get into adding MORE memory, let's look at how Atari designed the 130XE, a 128K machine, to access the extra memory.

Table 1. 130XE Port B Usage

Values			Bit Staus	
Bit	Hex	Dec.	High	Low
0	1	1	OS addressing points to ROM.	OS addressing points to RAM.
1	2	2	Internal Basic disabled.	Internal Basic enabled.
2	4	4	Bit mapped memory bank.	same.
3	8	8	" " "	"
4	1	16	CPU Banking disabled.	CPU Banking enabled.
5	2	32	Antic Banking disabled.	Antic Banking enabled.
6	4	64	Not used	
7	8	128	$5000–$57FF points to RAM.	Points to OS Diagnostic ROM.

How 130XE Memory Works

First, let's see how the CPU addresses the DRAM, and how DRAM functions. DRAM (Dynamic Random Access Memory) is a maze of little cells that are set up in rows and columns. A 64K DRAM has 256 rows by 256 columns, thus having 64K individual cells. To get at one of these cells, there are 8 address lines used for internal addressing of the DRAM. With 8 address lines, you can only address up to 256 items (0–255), but if you use these address lines twice, you can address 64K items. And it just so happens that 2 x 8 = 16, or the number of address lines the CPU has. Are things starting to become clearer?

Now each DRAM has a CAS (Column Address Strobe), and a RAS (Row Address Strobe) line, and every time the CPU addresses the RAM, circuitry in the computer sets up the first 8 bits with the RAS, and the second 8 bits of the address with the CAS. This is decoded inside the DRAM and the value of the cell for that Row/Column is placed on the data line, or read from the data if it was a write cycle--something I won't go into here. Now that we all understand this, we can move on to the good stuff.

To make the 130XE, Atari added another "bank" of 64K DRAMs for a total of 16 DRAM chips. To be able to address this extra memory, they use a banking scheme that banks 16K chunks of memory into the standard address range of $4000–$7FFF, as all of the other three 16K areas were having at least part of it used by the OS, Cartridge, or screen memory. For control of this area, they decided to use some of the bits of Port B of the PIA chip (rather than add a second PIA chip, which would have been my choice). This chip is a standard 6520 PIA, available most anyplace that sells 6500 series parts. The two Ports (A & B) of the PIA can be used as either input or output. Port A is used as an input for Joysticks, etc., but Port B is used as an output to control the extra RAM, and other things (Port B is used for joystick Ports 3 & 4 on the original 400/800's). Table 1 explains the use of Port B (memory location $D301) on the 130XE.

The way this works is really very simple. If you want to pull a certain bank of memory into the banked memory area, you just figure out the value you need, and store it in $D301. That's it. As an example, let's say we want to bank in the first expanded memory bank just for the CPU. We also want Basic and the OS on. The value to put in $D301 would be 161 decimal (1+32+128) or HEX A1 (8+2=A, 1+0=1). This could be accomplished with POKE 54017,161 in BASIC, or LDA #$A1, STA $D301 in assembly language.

Implementation

Now that we know what controls it, let's look at how it is implemented. This is where it gets difficult to explain. We now have two extra address lines that are going to get mixed into one and replace the A7 address line that normally goes to the RAM. Having done this, we will use a decoder circuit to switch the CAS from the normal RAM to the expanded RAM, when:

1) it falls in the banked memory address, AND

2) one of the enable bits are low AND that device is trying to access the RAM.

Since we are controlling the upper RAM address, we now have four chunks of 16K each we can use, controlled by bits 2 & 3 of Port B. In the 130XE, this controlling is done by the Freddie and MMU (PAL) chips.

How About the 800XL?

Now let's get on to the 800XL. The 1200XL, except for some led's attached to the PIA Port B, is almost identical when talking about memory. Table 2 shows the Port B layout for a standard 800XL. Table 3 shows the Port B layout for an 800XL w/256/320K. Table 4 shows the Port B layout for a 1 Meg 800XL.

Beyond 1 Meg

To go beyond 1 Meg causes some problems, and probably shouldn't even be considered unless you have some special applications. The biggest problem is running out of control bits in the 8 bit PIA Port. There are several ways to implement 4 Meg and beyond, though. In actuality, there really isn't a limit to the amount of RAM you could add to the 8 bit systems, although I think the most practical limit is 1 Meg even though my Meg upgrades will support 4 Meg RAM chips and decoding even beyond that on some of them.

Wrap Up

Instructions that come with our Meg upgrades include the easiest way to implement the 4 Meg, using bits 0 & 5 for a total of 256 banked 16K blocks, but it also causes some compatibilty losses (Antic and OS banking). What I think would be a better approach to this would be to use a second PIA chip. There's not much software support for more than 1 Meg, anyway.

Anyone wanting information about our upgrades can write us at Newell Industries, P.O. Box 253, Wylie, TX. 75098 or download "products.txt" from our BBS at 214-442-2584.

Table 2. Standard 800XL Port B Usage

	Values		800 XL Port B ---------- Bit Staus ----------	
Bit	Hex	Dec.	High	Low
0	1	1	OS addressing points to ROM.	OS addressing points to RAM.
1	2	2	Internal Basic disabled.	= Internal Basic enabled.
2	4	4	Not used	
3	8	8	" "	
4	1	16	" "	
5	2	32	" "	
6	4	64	Not used	
7	8	128	$5000–$57FF points to RAM.	Points to OS Diagnostic ROM.

Table 3. 800XL (w/256/320K) Port B Usage

	Values		800 XL Port B (256/320K) ---------- Bit Staus ----------	
Bit	Hex	Dec.	High	Low
0	1	1	OS addressing points to ROM.	OS addressing points to RAM.
1	2	2	Internal Basic disabled.	Internal Basic enabled.
2	4	4	Bit mapped memory bank.	same.
3	8	8	" " "	"
4	1	16	CPU Banking disabled.	CPU Banking enabled.
5	2	32	Bit mapped memory bank.	same.[a]
6	4	64	" " " "	"
7	8	128	$5000–$57FF points to RAM.	Points to OS Diagnostic ROM.

[a] At least one 256K upgrade also uses this for controlling Antic banking like the 130XE, for more compatibility.

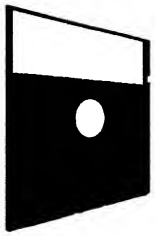
Table 4. 1 Meg 800XL Port B Usage

	Values		800 XL Port B (64K+1 Meg) ---------- Bit Staus ----------	
Bit	Hex	Dec.	High	Low
0	1	1	OS addressing points to ROM.	OS addressing points to RAM.
1	2	2	Bit mapped memory bank.	same.[a]
2	4	4	" " "	"
3	8	8	" " "	"
4	1	16	CPU Banking disabled.	CPU Banking enabled.
5	2	32	Bit mapped memory bank.	same.[b]
6	4	64	" " " "	"
7	8	128	" " " "	"[c]

[a] Internal Basic can be wired to a toggle switch for versatile at will switching between on and off.

[b] The Newell 1–4 Meg upgrades also uses this for controlling Antic banking like the 130XE, for more compatibility.

[c] When bit 4 is high (no banking), bit 7 acts like this.



Part 3
Special Macro Commands
by Frank Walters

[Editor's Note: This is the third installment of a four part article designed to introduce you to TextPRO macros. Frank is now working on a fifth part to this four part series :-).--RR]

What Are Special Macro Commands?

There are nine ‹inverse› "CONTROL" characters that have special functions when used in a macro. On your screen, they look like funny block characters. Each special macro command must be entered in the ESCape mode. [SELECT] must then be pressed while typing [CONTROL] then the desired letter. The key strokes would be as follows:

[ESC] [SELECT]_[CTRL]_[desired letter]

After you press all those keys, only one funny looking character will appear on the screen. So, while all the examples in this installment look long, they really don't take up much screen space once typed.

In Part 2 of this series, we used one of these special macro commands, [ESC] ‹[CONTROL]_[G]› to "GoTo" or link one macro to another. Now I will explain the other eight special macro commands: A, E, I, K, M, P, R, and Y in more detail.

"Ask" Prompt [ESC] ‹[CONTROL]_[A]›

[ESC] ‹[CONTROL]_[A]› should be followed by the desired prompt, which is then terminated by a [RETURN]. The "Ask" prompt requires the user to reply with "Yes" or "No." The default is "No," so if [Y] is not pressed, then "No" is assumed. If "Yes" is the reply, then the macro continues with whatever you wish it to do, which is whatever keys follow the [RETURN] character after the "Ask" prompt line. If "No" is the reply, *TextPRO* will look for the macro defined by the [&] key and will execute it. If [&] is not defined as a macro, then the macro will end after a "No" response.

NOTE: *TextPRO* version 5.0 will permit you to execute *any* macro you designate if a "No" reply is given following an "Ask" prompt. Version 5.0 will not automatically branch to the [&] key unless it has been preselected by the [ESC] ‹[CONTROL]_[P]› special macro key immediately preceeding the ‹[CONTROL]_[A]› command. [ESC] ‹[CONTROL]_[P]› will be discussed more later.

The "Ask" prompt will display your prompt in the status line at the top of screen. It will automatically add the following message to your text:

: Sure? (Y/N)

Note that a colon (:) immediately follows your question, in place of the carriage return. Here is an example macro using the ‹[CONTROL]_[A]› Ask Prompt:

```
#‹=›[ESC] ‹[CONTROL]_[P]› [&] [ESC] ‹[CONTROL]_[A]› Clear Screen? [RETURN]

[ESC] [SHIFT]_[CLEAR] [Y] &‹=›The screen didn't clear!
```

The [#] is the [START] key macro. I've included the [ESC] ‹[CONTROL]_[P]› [&] for you version 5.0 users. (Delete this if you're not using version 5.0.) Now, load this macro with [CONTROL]_[V] and press [START]. What you will see in the status line is the following:

Clear Screen?: Sure? (Y/N)

If your reply is "Yes," the macro will execute the "clear screen" command on the next line of the macro. Remember, you need to be in "Escape Mode" to send the "clear screen" command. When you type [ESC] [SHIFT]_[CLEAR] you will only see one character that looks like an arrow pointing up and to the left. The [Y] after [ESC] [SHIFT]_[CLEAR] answers the question you normally get when you try to clear the screen from the editor (ERASE ALL TEXT?: Sure? [Y/N]). Note that there is no [RETURN] between the [Y] and the &, otherwise that carriage return would print on the screen after it was cleared.

If the response is "No" for the above macro, the [&] macro is executed and the message "The screen didn't clear! "will be typed on the screen. Sometimes you will want

Key Board Conventions:

Keys on the keyboard are surrounded by brackets. [START] means the START key. Inverse characters are bracketed by "less than" and "greater than" symbols. ‹=› means inverse =, which is entered from the keyboard by first holding down [SELECT] then typing the [=] key. Multiple key strokes are indicated by an "underline" symbol or _ connecting the indicated keys. [SELECT]_[CONTROL]_[A] means first hold down [SELECT], then hold down the [CONTROL] key and while holding down both of those keys, press [A]. This series of keystrokes is also represented by ‹[CONTROL]_[A]›. "CONTROL" characters must be entered into the TextPRO editor by pressing the "Escape key" or [ESC] first. (Note: to help identify keyboard keys, I have also used a different font as shown above. -JW)

to send a message to the status line (not the screen) to indicate how to restart the macro. This message would be done with the special [ESC] ‹[CONTROL]_[Y]› key described later.

Erase File [ESC] ‹[CONTROL]_[E]›

Simply follow the [ESC] ‹[CONTROL]_[E]› with the device and filename you wish to erase. For example:

[ESC] ‹[CONTROL]_[E]› D1:DUMMY.TXT [RETURN]

The filename must be followed by a [RETURN]. You might want to use the Erase File function in conjunction with the Input command ([ESC] ‹[CONTROL]_[I]›), which pauses the macro to permit the user to type the filename to erase. [ESC] ‹[CONTROL]_[I]› is described later.

GoTo Another Macro [ESC] ‹[CONTROL]_[G]›

In the following example, the macro ends with the GoTo command, followed by the macro key you wish to execute next. When defining a letter macro key, I normally define both upper case and lower case letters to the same macro so it doesn't matter which case is selected by the user. The [i] macro must be defined somewhere else in the macro file.

k=›[ESC] ‹[CONTROL]_[G]›i (no [RETURN] needed)

This is a somewhat trivial but powerful example. Both [OPTION]_[I] and [OPTION]_[i] will execute the same macro (once [i] is defined. This special macro command was already explained in Part 2 of this series.

Input Mode [ESC] ‹[CONTROL]_[I]›

This is a powerful mode. It permits the macro to pause for user input, similar to INPUT in BASIC. When [ESC] ‹[CONTROL]_[I]› appears in a macro, it may either be preceeded by a prompt in the status line to explain what is requested, or it might follow a [CONTROL]_[S(ave)] or [CONTROL]_[L(oad)] command, which displays the prompt automatically.

The user types the information and ends the Input Mode with a [RETURN]. But like BASIC, the Return is not part of the Input and will not be sent to the editor unless your macro has a RETURN character following the [ESC] ‹[CONTROL]_[I]›. During Input Mode, the cursor keys are supressed and only a limited number of TextPRO "CONTROL" characters are available to the user until Input Mode is terminated. Here is an example of the Input Mode that I use to enter printer codes for italics "on" and "off" while typing in the editor. I've defined the printer codes for italics as inverse ‹i› for "on" and inverse ‹j› for "off." I use the /OPTION]_[I] or [OPTION]_[i] as the macro for italics:

k=›[ESC] ‹[CONTROL]_[G]›ii‹=›‹i›[ESC] ‹[CONTROL]_[I]›‹j› (no [RETURN] needed)

Invoking the macro types inverse ‹i› into editor to turn italics "on." Then the Input Mode is entered. The user continues typing and the characters are printed to the editor as they are typed. Backspace/delete must be used for corrections, since cursor keys are not available in the Input Mode. When the user decides to end the italics printing, he presses [RETURN] and the inverse ‹j› is typed automatically and Input Mode ends. With no *[RETURN]* following the [ESC] ‹[CONTROL]_[I]› in the macro, the user's [RETURN] is not sent to the editor, but is simply an indicator to the macro to end the Input Mode and continue executing to the end of the macro by typing an inverse ‹j› into the editor.

Keypress Wait [ESC] ‹[CONTROL]_[K]›

[ESC] ‹[CONTROL]_[K]› in a macro pauses the macro until the user presses any key. The key will not be sent to the editor, but the macro will resume with whatever follows the /[ESC]‹[CONTROL]_[K]› in the current macro key. It can be used to pause at a message in the status line to inform the user of something. The "PRESS ANY KEY" message is not sent automatically when using [ESC] ‹[CONTROL]_[K]›, but you can print a message there with a [ESC] [CONTROL]_[Y] command immediately preceeding the [ESC] ‹[CONTROL]_[K]›.

Menu Directory Branch [ESC] ‹[CONTROL]_[M]›

This is the TextPRO macro equivalent of the GOSUB command in BASIC. It is a bit complicated so I will cover it in detail in Part 4 of this series.

Preselect Macro [ESC] ‹[CONTROL]_[P]›

[ESC] ‹[CONTROL]_[P]› is used to designate any macro key to execute automatically after another macro is loaded via the [CONTROL]_[V] command within the macro. The syntax requires that [ESC] ‹[CONTROL]_[P]› be followed by the macro key to be executed (after the next macro is loaded) and then the [CONTROL]_[V] command with the device and filename of the macro to be loaded from disk:

?‹=›[ESC] ‹[CONTROL]_[P]›@[CONTROL]_[V]TEXTPRO.MAX [RETURN]

Here the [HELP] key [?] is designated as a macro key to pre-select the [@] (automatic) macro key after TEXTPRO.MAX loads. [CONTROL]_[V] is the "Load Macro" command. TEXTPRO.MAX is the filename of the macro to be loaded and must be terminated with a [RETURN]. When TEXTPRO.MAX is loaded, if [@] is defined as a macro elsewhere, it will execute automatically. Any macro key can be used following the [ESC] ‹[CONTROL]_[P]›, not just the [@]. But for simplicity and standardization, the [@] key is normally used as

the automatic macro key. This is the key TEXTPRO.MAX designates when it loads another disk macro file via the [START] key.

NOTE: Version 5.0 uses [ESC] ‹[CONTROL]_[P]› for several other features, one which we've used previously in this installment. When used prior to the "Ask" prompt special macro command ([ESC] ‹[CONTROL]_[A]›), the macro will branch to the pre-selected key if the answer is negative. If the answer is "Y" the macro will continue. If there is no pre-selected key, the macro will terminate. When used prior to a [CONTROL]_[L(oad)] command, the macro will branch to the pre-selected key if there is an incomplete load, i.e. "Links Active" is received. When used prior to a [CONTROL]_[D(elete)] or /CONTROL_[F(ind)] operation, the macro will branch to the pre-selected key if the string is "Not Found."

Rename A File [ESC] ‹[CONTROL]_[R]›

Here's the syntax:

[ESC] ‹[CONTROL]_[R]› D8:OLDNAME.TXT,NEWNAME.TXT [Return]

Just like using AtariDOS, include the drive number for the old filename, so TextPRO can find it. Just the new filename is required following the comma (,). This special macro command must be terminated by a [RETURN].

Print Message (Temporary) [ESC] ‹[CONTROL]_[Y]›

This must be followed by your message and terminated by a [RETURN]. Your message, all characters up to the [RETURN], will then be printed on the status line until the next keypress. This is one of the most useful of all special keys as you keep the user informed as to what to do next, but without messing up what is in the editor itself.

Referring back to a previous example, I use the [ESC] ‹[CONTROL]_[Y]› Print message to status line to indicate italics "on" mode. I insert it immediately before the [ESC] ‹[CONTROL]_[I]› in the macro. I also add another [ESC] ‹[CONTROL]_[Y]› following the ‹› to remind the user when italics is "off." Here's what that looks like when added to my previous example:

‹=›[ESC] ‹[CONTROL]_[G]›ii=x‹[ESC] ‹[CONTROL]_[Y]›Italics On [Return]

[ESC] ‹[CONTROL]_[I]x› [ESC] ‹[CONTROL]_[Y]›Italics Off [Return]

What's Not and What's Next?

The permanent message in the status line is no longer available for use in macros since version 4.55, as that special macro command, [ESC] ‹[CONTROL]_[M]›, is now used for the Menu directory branch (GOSUB) function. Part 4 will deal almost exclusively with this last macro, since it is so powerful (and confusing).

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Programming with dBMAN: *Simple Ways to Solve Complex Problems*

Part 1

(C) 1993 David C. Troy

More and more, we get calls from users who want to do impossible things. One customer may want a mailing list manager that also handles billing. Another one may be a service professional who needs to do scheduling, contact management, and billing. And oh, by the way, can they attach a small note or a picture to each client and also have their modem dial their number? And what about inventory management? What about transferring part numbers and inventory levels to a spreadsheet on another computer?

As each of these people has one or more unique requirements, no one package is right for all of them. And frequently, even a single user's own criteria negate the value of most, if not all, commercially available best-fits. *Tracker ST, Cardfile 4, Phasar 4, Mailing List Manager, Superbase Personal, CRICIT, MegaCheck, LDW Power, 3D Calc*, and *K-Spread* almost always come astonishingly close to fulfilling most users' fantasies, but somehow there always seems to be one ingredient missing that necessitates the purchase of two or more non-integrated packages. And as we all know, solutions whose output can't be easily integrated are frequently more trouble than having no solution at all.

Solving the Puzzle

For those inclined to do a bit of experimentation, writing a customized program to solve your particular problems is a terrific way to drive past the gridlock of the ready-made software traffic jam. But choose your language carefully. More experienced users (who also have a lot of time on their hands) may wish to work in C, Pascal, or Modula 2. Others may choose to work in some of the popular structured basics (like *GFA* and *HiSoft Power Basic*.) But if you don't want to worry about the physical mechanics of opening disk files with GEMDOS file handles, passing parameters by address instead of by value, and writing your own routines to do input, output and sorting, give VersaSoft's *dBMAN* a try.

What the Heck Is It?

Significantly before time began, Ashton-Tate, Inc. gave birth to *dBASE*—a relational database package. As time went on (marching rapidly through the early eighties), newer versions of *dBASE* were developed. *dBASE IV* is the current version, and *dBMAN* can be considered to be a clone of *dBASE III+*, the immediate predecessor of *dBASE IV*.

dBMAN is, however, more than just a clone of *dBASE III+*. It's often much faster and it also has many commands and functions that *dBASE* lacks.

As I explained last month, *dBMAN* is available for many, many hardware/software platforms, including DOS and Unix. So, whatever you write in *dBMAN* for the ST is easily transportable to another machine.

But the real beauty of *dBMAN* is that it is a really easy to understand high-level programming language that is also fast and full featured. For those of you who are not computer dweebs, "high level" means that it is very close to English in the way it reads.

For those of you who *are* computer dweebs, *dBMAN* is very similar to BASIC, PASCAL, and C. The difference is that *dBMAN* includes a vast array of data base oriented commands and functions—functions that would require a lot of time to write and fully debug in any other language.

What's more is that *dBMAN* and *dBASE III+* are not the only choices for this kind of programming. There is an entire family of data base programs that are based on the same essential commands. These data base languages are said to be "XBASE" compatible. Each implementation is likely to have its own special features and commands (*dBMAN* has several that have kept me using it on the PC), but essentially, if a data base claims to be XBASE compliant, you'll be able to port over programs to other platforms with little difficulty. On the PC, *Clipper, dbFAST*, and *FoxPro* are just a few of the XBASE compatible data bases. *dbFAST* has the advantage of giving you an interface to Windows. On the Macintosh, there's *dBASE* and others available as well.

The discussion here will be limited to the Atari ST implementation of *dBMAN*, which is currently at version 5.3. This will be a multi-part series, and the number of parts will be determined by the amount of writing it takes to do a decent tutorial on the language.

This month, we will start by talking about the most important element you'll use in *dBMAN*: data.

Establishing a Data Structure

Before you can begin to solve a problem with *dBMAN*, you need to determine exactly what information you wish to store. Then you need to decide on a structure that perfectly and exactly fits your data. This is often the hardest part. If you can hit on exactly the right structure for your data, you will find that writing a program to manipulate it is easy. Conversely, if you choose the wrong data structure, it's doubtful you'll be able to write a useful program at all.

Let's try a couple of examples. Our data base system here has several data bases, because we need to keep track of many things. Here's a rough outline.

CUSTOMER DATA BASE:

Customer Number	6 Characters
First Name	20 Characters
Last Name	20 Characters
Company Name	35 Characters
Address Line 1	35 Characters
Address Line 2	35 Characters
City	20 Characters
State	10 Characters
Zipcode	10 Characters
Phone Number	13 Characters
FAX Number	13 Characters
E-Mail Address	13 Characters
Last Contact Date	4 Characters
Source of Name	6 Characters
Type of Name	1 Character

There's little about an individual that we need (or have a right) to know that won't fit in this structure. Can you think of anything? If so, add it in! Your data base can be customized to fit your needs. If you also need to keep track of what county a person lives in, just add an extra field. If you don't care about their e-mail address, take it out.

ORDERS DATA BASE:

Customer Number	6 Characters
Order Number	5 Characters
Payment	19 Characters
Expiration Date	4 Characters (used with credit cards)
Salesperson	5 Characters
Shipping Method	11 Characters
Shipping Cost	6 Digit No. (w/2 decimals)
COD Fee	6 Digit No. (w/2 decimals)
Sales Tax	6 Digit No. (w/2 decimals)
Other Charges	6 Digit No. (w/ 2 decimals)
Date of Order	8 Bytes (Date Format)
Ship Date of Order	8 Bytes (Date Format)
Time of Order	8 Characters
Memo	Allows entry of a 64K (max) text letter
Taxable	1 Logical Value (True or False)

This structure normalizes every piece of unique information we need to know for a given customer order. Perhaps you also need to add in a fee for processing. Simple. Just make a field called "Proc_Fee" and you're ready to go. Also, note that I am using verbose, easy to understand names in describing these fields. In reality, you have to limit the field names much the way you have to limit filenames. So, "Shipping Method" is in fact represented as "SHIP_METH" in my data base. But for clarity's sake, I am writing them out completely.

There's still one more thing we need to know about a customer order: what they bought. Oh yeah. Well, all we have to do is use one more data base, and I call it "Items Sold." Here's its structure.

ITEMS SOLD DATA BASE:

Order Number	5 Characters
Item Description	40 Characters
Manufacturer	6 Characters
Quantity Sold	4 Numeric Digits
Qty Backordered	4 Numeric Digits
Sell Price	7 Numeric Digits (w/2 Decimals)
Our Cost	7 Numeric Digits (w/2 Decimals)

The items sold data base can contain as few as one record per order or as many items as disk space will permit. Each entry in the **ITEMS-SOLD** data base takes only 73 bytes, so you can store *many* items with no problems. Each entry is linked to a particular order by its order number.

Now it comes time to print a receipt. We have everything we need to know. See the example on page 58. Each component comes from one of our data bases, and, as you can see, the information on the receipt perfectly matches our data structure.

There are other things that we have recorded about the order and about the customer that may not appear on the receipt. For instance, we have recorded a shipping date for the order so that when someone calls to check on their order we can tell them when it left, but as the order obviously hasn't left at the time of its first printing, we don't reference this field on the receipt. Also, we have recorded the customer's e-mail address in case we need to reach them that way, but there's no real good reason to put it on their order receipt.

We use other data bases to track our checking account information, our inventory, and more. But again, it's a question of identifying what data we want to store, settling on a data structure that perfectly normalizes the data, and then implementing and automating it. It's that simple.

Our Example

Let's suppose that we want to write a simple program in *dBMAN* that handles your checkbook. It's really easy to do. First, there are really only two things you can do to a checking account. You can add money in and you can take money out.

Reasons for adding money in might include a deposit, a credit to your account from your bank, a wire transfer into your account, or perhaps an electronic transfer of funds from a savings account using your ATM card.

Reasons for taking money out would be writing checks, a debit to your account, ATM withdrawals or payments, electronic payment, or other bank service charges.

You will also want to track your account balance. This can be easily accomplished by summing together all credits (positive numbers) and debits (negative numbers) to your account.

For now we are just going to set up the data bases that will make all this swell stuff possible. We'll automate their use next month by writing an elementary control program.

The CREATE Command

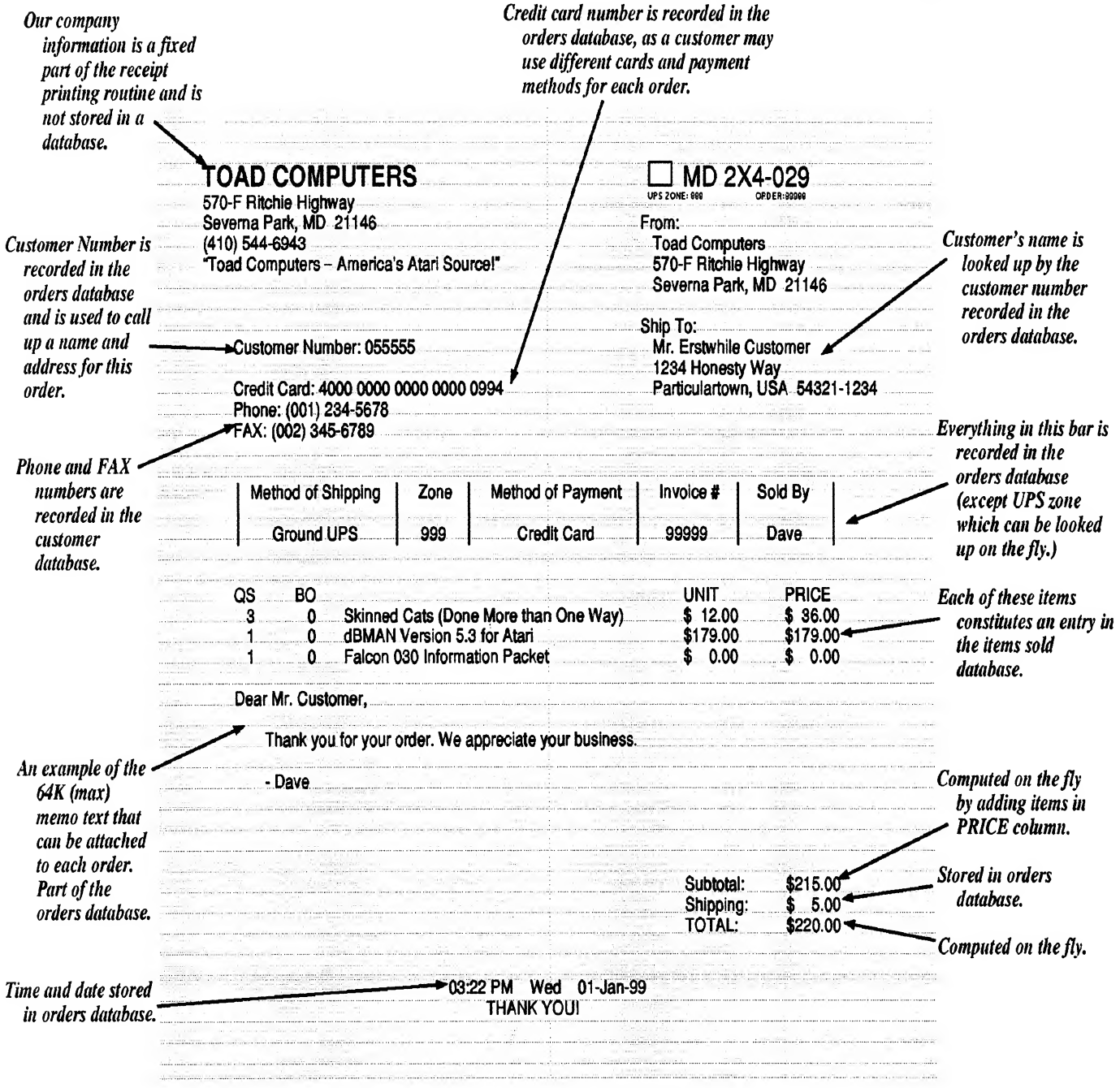
In order to set up our checking account system, we need to create the data bases for it. By double clicking on the *dBMAN* program, you will find yourself in *dBMAN's* interpreter mode.

Type "CREATE PEOPLE." *dBMAN's* data base structure editor will appear, and you can use the keyboard to create and move among the various fields. Our *people* data base will look like the screen on the right:

```
CMD:create people

MSG:Done
```

	fieldname	type	width	decimal
1	ACC_NUM	C	4	
2	NAME	C	35	
3	ADDRESS	C	35	
4	CITY	C	35	
5	STATE	C	2	
6	ZIP	C	10	
7	PHONE	C	13	



The "C" indicates that we wish each of these fields to be character strings (as opposed to numbers, logical values, date-fields, or memos). Consult the *dBMAN* manual for more information regarding alternate data types. The number indicates how many bytes we will allow for each field. I have used "35" as a number for names and addresses, as it's just about the maximum width of a standard mailing label when you print at 10 cpi on a dot matrix printer.

After you've got the fields just right, press [Control]+W (abbreviated as W] (write) and the data base will be created.

Now you have an empty data base. To illustrate how you would access this data base without first CREATE-ing it, type CLOSE ALL and then type USE PEOPLE. *dBMAN* has multiple "file areas" and CREATE-ing a data base, or USE-ing it later will make that data base the active data base file in the default file area. Later, we will discuss how to switch file areas, but for now, just know that CREATE-ing and USE-ing activates the specified data base.

Now type APPEND. *dBMAN* will allow you to start typing in names and addresses. Type in the names of the people to whom you most frequently write checks. Assign each one a unique ACC_NUM (account number) and pad them with 0's on the left. Here's an example of how your PEOPLE data base might look after you've entered in a few names.

```
ACC_NUM     0001
NAME        CITIBANK
ADDRESS     BOX 123
CITY        LONEVILLE
STATE       UT
ZIP         80000-2468
PHONE       800-123-4567

ACC_NUM     0002
NAME        YOURTOWN GAS & ELECTRIC
ADDRESS     PO BOX 555
CITY        UTILITY
STATE       NH
ZIP         03000-1234
PHONE       603-123-6789

.....

ACC_NUM     0010
NAME        LOOSE SCREW AUTO REPAIRS
ADDRESS     338 MOUNTAIN ROAD
CITY        PASADENA
STATE       MD
ZIP         21122-0338
PHONE       410-555-7501

ETC., AD INFINITUM...
```

So after you've written some names into the PEOPLE data base (use W to save and return to the command mode), you've set up your "accounts."

Now it's time to set up your CHECKING data base—where you store every transaction of your checking account. Its structuremight be as follows.

	fieldname	type	width	decimal
1	ACC_NUM	C	4	
2	DATE	D	8	
3	AMOUNT	N	8	2
4	TR_TYPE	C	10	
5	TR_MEMO	M	10	

The ACC_NUM field allows us to link a person in our PEOPLE data base with each transaction in the CHECKING data base. If, for example, we were going to write a check to "Loose Screw Auto Repairs," the ACC_NUM field in the checking data base would be filled with "0010," their account number.

As I have already indicated, each transaction needs only one field for amount, and the amount can be either positive or negative. Clearly, events which constitute payment or withdrawal of funds (checks, ATM transactions, GEnie bills) would be negative because they affect your account balance negatively. Deposits and other credits to your account would likewise be positive, as they affect your account balance positively. So, our AMOUNT field will contain either a positive or negative number depending on the nature of the transaction.

It might be helpful for you to categorize your transactions for your own records. This is what the TR_TYPE field is for. You might choose to fill it with "CHECK" for checks, "ATM WD" for ATM withdrawals, and "DEPOSIT" for deposits. Make up your own codes; they're for your own use.

As you know, it is frequently helpful (and often necessary) to attach a note to your checks and other financial transactions so that you can know what's deductible, what isn't, what you spent that $687 on, etc. Well, the TR_MEMO field is another handy dandy memo field, which will allow you to attach up to 64K of text to each checking transaction. That should be enough. Consider that this whole article is well under 30K.

Furthermore, you may find it convenient to further categorize your financial transactions. If you want to separate your transactions from your wife's, set up another field:

```
MINE            L       1
```

If MINE is TRUE (.T. or .Y.—this is the syntax you must use when you're writing programs in *dBMAN*), then you're to blame for that particular transaction. If it's FALSE (.F. or .N.), then that can mean it's your wife's. Easy, huh?

Enter in a couple of transactions, like these for instance:

```
ACC_NUM   == leave empty ==
DATE      04/01/93
AMOUNT    8032.48
TR_TYPE   DEPOSIT
TR_MEMO   "Initial balance in our account."
MINE      Y
```

```
ACC_NUM  0002
DATE     04/17/93
AMOUNT   -517.51
TR_TYPE  CHECK
TR_MEMO  "Installation of gas line on 04/11"
MINE     N

ACC_NUM  0001
DATE     04/22/93
AMOUNT   -424.68
TR_TYPE  CHECK
TR_MEMO  "VISA payment–mostly sweaters"
MINE     N

ACC_NUM  0010
DATE     05/14/93
AMOUNT   -583.61
TR_TYPE  CHECK
TR_MEMO  "Body work on rear panel on Honda"
MINE     Y

ACC_NUM  == leave empty ==
DATE     05/16/93
AMOUNT   236.97
TR_TYPE  DEPOSIT
TR_MEMO  "Tax Refund"
MINE     N
```

Ok, so we've gone and built all this framework now, but why? And why would I want to spend this much effort on my checkbook? Well, admittedly, you've swallowed some hard pills in setting up these data bases, but next month we're going to write a program that can automate this whole thing. And in the meantime, you know what's being stored and where, and this will give you the ability to go and tinker with everything in the future.

Answering Questions

dBMAN, while it's most powerful when it is used for programming, has many powerful commands that you can execute on your own with no programming required.

For instance, you may want to see a list of every person in your PEOPLE data base who lives in Maryland. Simple. (Note that these examples assume that you are not already USE-ing the data base specified in the USE command. If you are, skip the USE command.) Do this:

```
USE PEOPLE
DISPLAY ALL FOR STATE='MD'
```

Loose Screw Auto Repairs will appear. Press escape to exit.

You may want to know how many transactions your poor checking account has suffered through. Try this:

```
USE CHECKING
COUNT ALL
```

dBMAN will report how many transactions are in your checking account. (5 are in this example.)

You may wish to know your account balance. As I have said, your account balance is nothing more than the sum of all the transactions. This is easy:

```
USE CHECKING
SUM AMOUNT ALL
```

dBMAN will report your current account balance.

Suppose you wish to know how much money your wife has sent to Citibank Visa. Simple:

```
USE CHECKING
SUM amount ALL FOR acc_num = "0001" AND
   NOT MINE
```

It will report -424.68. See how easy that is? And it's easy to understand, too.

Syntax

If you look in the *dBMAN* manual, you will find that the basic syntax of each command is similar and follows some simple rules. For instance, the SUM command (used above) has the following syntax:

```
SUM [‹File Area›][‹expList›][TO ‹varList›][‹scope›][FOR
   ‹Lexp›]
```

File Area, expList, and TO varList can all be omitted for now, although we have already used expList above when we specified the amount field.

What is most powerful is the scope and FOR Lexp specifications. What we must first understand about scope is that in each active data base, there is a record pointer that references a particular single record. The record pointer is set to one (or TOP) when you first open a data base. Then, you can use other commands to reposition the record pointer. Here are a few—we'll talk about more next time:

```
GOTO ‹record number ¦ TOP ¦ BOTTOM›
SKIP ‹positive or negative number›
DISPLAY
```

With DISPLAY, the record pointer is moved to the record the cursor is on when you exit display mode.

So anyway, there's this record pointer, and it has nothing to do with our fabricated account numbers or any other data we might be storing.

Imagine 10 records in a *dBMAN* data base as a stack of 10 index cards where each card can have different information on it. Our record pointer is simply a number between 1 and 10 that tells us which card we're currently working with. GOTO 2 would bring us to the second index card. GOTO BOTTOM would take us to the tenth. DISPLAY ALL would allow us to select any record (card) between 1 and 10. Suppose we picked 3 and then said SKIP 4. We'd go to card 7. Then suppose we said SKIP -2. We'd go to card 5. Get the idea? All of this is completely independent of the information on our index cards.

Back to **scope** now. Scope is a phrase that will qualify the action of your *dBMAN* command; and it helps if you know about the record pointer. Here are some valid scopes:

ALL	includes every record (all 10 index cards)
RECORD n	specifies only a particular record (nth)
NEXT n	next n records from record pointer

REST	all records from record pointer to BOTTOM
WHILE ‹Lexp›	all records from record pointer until the logical expression Lexp becomes false
ALL FROM r	all records from record #r to BOTTOM–same as REST if record pointer is at record #r

The most common scope is ALL, but as you go on, you will find that the others can come in handy.

As we saw in the example where we wanted to see how much your wife had sent to Citibank, the FOR ‹Lexp› specification can help further narrow your records. ‹Lexp› is just a logical expression. Here are some examples of ‹scope FOR logical expressions›:

```
ALL FOR lastname = "JONES"
ALL FOR amount › 2200
ALL FROM 1255 FOR state = "KS"
REST FOR value ‹ -67.50
NEXT 10 FOR mine
```

So a logical expression is something that evaluates to being just true or false. The LASTNAME field either equals JONES or it doesn't—true or false. AMOUNT is either greater than 2200 or it isn't. Period. And MINE is either true or false.

So now, you can see that the scope and FOR phrases allow you to pick and choose exactly which records you wish to reference.

Other Helpful Commands

Before we retire for this month, let me tell you about a few other commands and keys you might find helpful in your experimenting. We'll go into them in greater depth later, but you should know they exist in the meantime. Furthermore, after you have successfully experimented with a few commands here, you will be able to pick up the *dBMAN* manual and begin using other commands and functions.

EDIT	similar to APPEND but lets you edit current record
BROWSE	similar to DISPLAY but allows editing
?‹data›	prints, on screen, the data / expression you specify
COUNT	counts records—experiment with scope and FOR
DELETE	deletes current record, or can be combined with scope and FOR to delete a set of records
DIR	displays a disk directory
RECALL	undeletes with same syntax as delete
PACK	permanently deletes all deleted records
LOCATE	use with scope and FOR to move the record pointer to the first record that satisfies scope and FOR
QUIT	exits dBMAN and returns to the desktop

REPLACE fieldname WITH expression
use with or without scope and FOR to change a field or fields in a single record or a set of records

SET FILTER TO ‹Lexp›
makes data base appear as if it contains only records which satisfy Lexp. Preempts other FOR phrases you may use in later commands. Type SET FILTER TO with no Lexp to clear the filter.

These are almost all of the commands that will be useful to you without writing a program, and they're quite a powerful bunch. There are also many functions (commands that return values), which may be useful to you as well, but you'll want to reference the manual for those, as there are too many for me to get into them now.

But, next time, we'll cover indexing, some functions, and writing your own checkbook management program. Hang in there. If you have questions regarding *dBMAN* programming, please send them to me via GEnie mail (at Toad-Serv.) or on my BBS at (410) 544-6999. You can also send them via U.S. mail, but I may not have time to respond to you that way.

Good luck, and may you find that *dBMAN* is as powerful a tool as I have found it to be.

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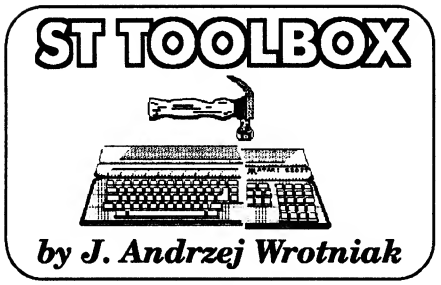


Programming as a State of Mind

Object Oriented Programming

A Blessing, a Curse, and a Smoke Screen

(Part One of Two)

by J. Andrzej Wrotniak

This is the seventh in a series of articles on general concepts of programming, addressed not only to those who program, but also to non-programmers who would like to know what all this is about.

The more advanced Readers may treat each article as a self-contained whole, but many will benefit from reading (or re-reading) the previous installments:

1. Apr '91: "Programming as a State of Mind"
2. May '91: "What Does Not Make a Programming Language"
3. Jul '91: "Data Typing 101"
4. Dec '91: "Procedures, Functions and Subprograms"
5. Jun '92: "Show Me Your Data Structures..."
6. Dec '92: "Modules, Units, Packages: Divide Et Impera"

The June '92 article is especially relevant for today's installment, as it introduces the concepts of data abstraction and information hiding.

The term "Object Oriented Programming" gained a wide popularity about five years ago, especially in industrial (as opposed to mass-market) software development. Suddenly, whole teams of brave and dedicated professionals started going through existing software documentation and new project proposals, randomly adding words "Object Oriented" here and there, with an average frequency of 2.7 (existing documentation) or 4.3 (new proposals) occurrences per page.

Industry Secrets

Initially, I kept wondering why all this hoopla, but then I came across a secret industrial study and it opened my eyes. Without revealing my sources, here is the secret.

The human psyche is a complicated system. Under some circumstances it can be predictably triggered into an action by a proper key phrase. For example, the word "free" invariably makes most people reach for a credit card (at first I was puzzled why a "free gift," but now I understand: most people expect to pay for gifts they are receiving).

In a similar fashion, the phrase "object oriented" triggers an irresistible buying urge in most of the industry managers responsible for procurement of software systems (i.e. spending money on us Beltway Bandits). At a number of meetings, I've tried to see why, but it was impossible to even get any explanation on what "object oriented" means; the most frequently used equivalent was "I want it." (One may suspect a devious campaign of subliminal advertising.)

This may sound like a joke, but it isn't (well, even if I am exaggerating, then just a little, to make a point).

Among another group of people, aspiring industrial programmers, "object oriented" means not much more than "I want this job." In the last year, I interviewed 20 or so job applicants with OOP and C++ on their resumes, and (with two or three exceptions) they did not have any idea what this term might, even approximately, mean. Some thought it was programming screen widgets (menus, windows, dialog boxes and such); for others, the whole familiarity was limited to recompiling a C program under a C++ compiler.

Therefore, whether you are a programmer or not, do not be ashamed not to know what "object oriented" means. Lack of a (given piece of) knowledge is not a sin by itself, only an active resistance to acquiring it is. (Now I am giving you no excuse not to finish reading this column...)

The Lower Levels of OOP

It is possible to talk about four levels of object-oriented programming. The two lower ones have been discussed in our June '92 State of Mind ("Show Me Your Data Structures..."). Let me offer just a brief reminder.

Level One is data encapsulation: a real-life object is mapped into a single data object of a composite type (record, struct, or whatever 'ya call them). The operations dealing with the object as a whole do not need to know its structure and do not need to be modified when this structure is changed by the programmer.

Level Two is information hiding (making it private): the object's structure is not visible from outside, i.e. from program units not designed specifically to deal with the object's internals. Usually the program unit defining the structure also contains the functions (procedures) authorized to access it. All other units may change the object's properties only with these supplied tools.

Level One: Pascal and C

Among popular programming languages, Pascal and C provide us with language mechanisms sufficient for Level one (**RECORD**s in Pascal or **struct**s in C), and so do some non-standard extensions to other languages (e.g. Microsoft or VAX/VMS FORTRAN, even some dialects of BASIC). Thus, for example, a (grossly simplified) Pascal data object describing a protagonist in an adventure game may look like

```
TYPE Person = RECORD
 Name: STRING [15];
 Health: INTEGER;
 Dead: BOOLEAN;
 END;
```

while an equivalent declaration in C (ANSI standard, forget anything else) may be

```
typedef struct Person {
 char name[16];
 int health;
 int dead;  /* 0 or 1 */
 };
```

Accessing *fields* (components) of data objects from any part of a program is not limited in any way. If **Guy** has been declared as a **Person**, then we may write, for example,

```
Guy.Health := Guy.Health-12;
IF Guy.Health<=0 THEN Guy.Dead := TRUE;
```

or (just to make my point that both languages do not differ in anything significant):

```
Guy.health = Guy.health-12;
if (Guy.health<=0) Guy.dead = 1;
```

(the first person telling me how great and different is the **-=** operator in C, and how it makes programming different, will be kicked out of the class).

Level Two: C++

C++ and Ada (also *Turbo Pascal* and, with severe limitations, Modula-2) allow for making the internal structure of a data object invisible (and inaccessible) from any program module, except for the library module where the object type was introduced. This means that to modify an object, or even just to access its attribute (without modifying it), the program has to use functions (sometimes also called *methods*) designed specifically for this purpose and supplied together with the object definition. Our simple C example can be written in C++ as

```
class Person {
private:
 char name[16];
 int health;
 int dead;
public:
 Person(char nam[], int hlt);
 void Get_Name(char s[]) const;
 int Health() const;
 int Dead() const;
 void Kill();
 void Hit(int i);
 };
```

Note that the data elements have not changed from the C version, although now they will be invisible to the rest of the program. The latter is the reason why the object type (or **class**) designer had to supply a number of methods to access these items. **Person()** is a special function, called a constructor, and is the only way to create a **Person** object, like in

```
Person Guy( Guy the Warrior ,100);
```

(obviously, inside the constructor, the value of **dead** will be set to 0, i.e. False), while **Get_Name()** will copy the **name** field into the parameter supplied as **s**.

In a somewhat less clumsy fashion (all this because C really does not have **array** types, it only pretends to have them), **Health()** and **Dead()** just return the appropriate values from inside the record, without modifying it (this is made clear by the **const** keyword in the function declaration. For example, **Dead()** will be implemented in a quite trivial fashion as

```
int Person::Dead() {
 return dead;
 }
```

And finally, **Hit()** and **Kill()** (no **const** here!) modify, appropriately, the contents of a **Person** object.

Our two-line example of how to use a **Person** can be now re-written as

```
Guy.Hit(12);
if (Guy.Health()<=0) Guy.Kill();
```

Note the dotted notation of function calls (the object before the dot is, in fact, another function argument, just different syntax) and also the difference between **health** (a data component) and **Health** (function name).

This, being a literal translation from C to C++, is an example of quite lousy design (and I have seen lot of that, not all of it my own!). Obviously, the function **Hit()**, internally subtracting a given number of points from **health**, may check whether its value drops to zero, and whether our hero is dead. The second line, or its equivalent, can (and should) be moved to the *implementation* of function **Hit()** (not shown here) and, possibly, function **Kill()** may also not be necessary (unless we want to be able to kill our warrior without hitting him).

In this, quite object-oriented, approach, quite a lot of design decisions are shifted from the stage of using a library module to the stage of designing it: do it just once, but do it right. The final code will be simpler and more robust: we will never have to remember to check the health of a **Person** after hitting it.

Moreover, the private character of the data components (also called *members*) allows us to change them at any time, with the rest of the application unaffected. For example, we can get rid of the **dead** flag: setting **health** to zero should be enough to denote a dead **Person**. This will save us some storage space. To keep the class interface (methods) unchanged, we will retain the **Dead()** function, but its implementation will have to be changed to

```
int Dead() const {
 return health<=0;
 }
```

but this is a library detail, not affecting the rest of the application at all.

Level Three: Inheritance

Our discussion of Levels One and Two of OOP was, really, a reminder of the State of Mind of one year ago. Only now we are entering an entirely new area, available in the so-called OOP languages (C++ and *Turbo Pascal* from Version 5.5 up).

The first new feature here is *inheritance*, or *deriving* an object type from another, simpler one. Allowing for unavoidable simplifications, we can demonstrate it with an extension of our adventure game example.

Our **Person** type was quite generic. Now we want to introduce another object, a **Warrior**. Obviously, a **Warrior** is also a **Person**, and should have all data components and functions of the latter, plus more. In our simplistic approach let us assume that a **Warrior** is just a **Person** with the added attributes of dexterity and carried weapon.

In a language like C or Pascal this would have to be done by declaring a **Warrior** record type, with a **Person** as one of its components, as in

```
TYPE Warrior = RECORD
 Per: Person;
 Dexterity: INTEGER;
 Weapon: Weapons;
 END;
```

(where **Weapons** is a previously defined data type, possibly an enumeration, see "Data Typing 101," but it is not so important here).

The extra attributes can be accessed in the normal "dotted" notation as, e.g., **Hulk.Dexterity** denoting the dexterity of a warrior **Hulk**. The "old" ones will need a double-dotted access, as in **Hulk.Per.Health**, the health of the **Person** who is (inside!) **Hulk**.

```
PROCEDURE Attack(VAR who: Warrior; VAR whom: Person);
   VAR pts: INT;
   BEGIN
    ...compute pts from who.Dexterity and who.Weapon
    who.Per.Health := who.Per.Health-1;
    IF who.Per.Health<=0 THEN who.Per.Dead := TRUE;
    whom.Health := whom.Health-pts;
    IF whom.Health<=0 THEN whom.Dead := TRUE;
    END;
```

The more detailed example in the box above illustrates a function representing an attack of a **Warrior** on a **Person**. It can be called as

```
Attack(Hulk,Guy);
```

to simulate **Hulk** attacking the poor **Guy** (note that **Guy** cannot attack **Hulk** as **who** has to be a **Warrior**, not just a **Person**!). Inside the function implementation **whom.Health** is reduced as the result of attack, but so does **who.Per.Health** (the attacker getting tired by aggression, or acquiring a bad karma).

Yes, **Hulk** could also attack **Brute** who is a **Warrior**, but we would have to do it in a not very elegant way:

```
Attack(Hulk,Brute.Per);
```

as **Brute** is not a **Person** in the strict Pascal (non-OOP) sense.

This is a workable solution, but, really, there is nothing to prevent a smart compiler from knowing that a **Warrior** really *is* (rather than contains) a **Person**! This is reflected in C++ (or *Turbo Pascal*) by *deriving* the **Warrior** class from the **Person** one:

```
class Warrior: public Person {
private:
 int dexterity;
 Weapons weapon;
 int Hit_Pts();
public:
 Warrior(char nam[], int hlt, int dex);
 void Get_Weapon(weapons w);
 int Dexterity() const;
 void Attack(Person &whom);
 };
```

The words **public Person** at the top really mean "also is a..." . The **Warrior** class automatically inherits all data components and methods of a **Person** (which is the *base class* here). Therefore, all we have to specify below is the additional data and methods. The private data fields do not need any comments. The **Warrior()** constructor will build a **Warrior** data object with given name, health and dexterity and, the

way we designed it here, with no weapons, which have to be explicitly acquired by the appropriate function call, as e.g.

```
Hulk.Get_Weapon(Chainsaw);
```

Dexterity() is, again, a trivial attribute-fetching method, called as **Hulk.Dexterity()**. Finally, the **Attack()** method does not need a **who** parameter, because it is called with the attacker before the dot, as in **Hulk.Attack(Guy)**, and its implementation may look like this:

```
void Warrior::Attack(Person whom) {
 Hit(1);
 int pts = Hit_Pts();
 whom.Hit(pts);
 }
```

Note that **Attack()** uses a method **Hit_Pts()** specified as private, i.e. accessible only from other methods of the **Warrior** class.

Just a matter of C++ syntax, the first call to **Hit()** above does not specify an object with a dot. This means: apply the method to the same object to which you are applying the outer one, i.e. **Attack()**. (The same is true about the call to **Hit_Pts()**.) Note, however, that **Hit()** is therefore applied to a **Warrior**, not just to a **Person** for which it was designed!

This is perfectly OK, as at this level of object-oriented approach, derived class objects can be used anywhere where the base class ones can be used. Yes, this nice feature allows **Hulk** to attack **Brute** directly:

```
Hulk.Attack(Brute);
```

even though **Brute** is a **Warrior**, not just a **Person**.

A Revolution or Just a Convenience?

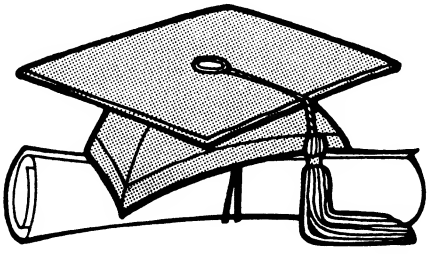
The derivation/inheritance mechanism is a very convenient tool, streamlining our code and making it more readable and easier to modify. Let us not, however, overestimate its importance; with just a little more legwork we can do everything without it, in plain old C or Pascal (or Ada). In my humble opinion, the first step (record structures introduced in Level One) was more revolutionary. You can do a lot of Object Oriented Programming without resorting to an OOP language (I could say "OOP is a state of mind," but this handy phrase is already taken).

Some programmers (especially those who recently started using OOP languages) draw the division line significantly higher. According to them, object-oriented programming starts only from Level Four: the *virtual methods*. This will be the subject of the second part of this installment, next month, together with a quick discussion of the pros and cons of the object-oriented approach.

I have to apologize for making this column quite C++ specific. This was difficult to avoid, as C++ is really the only OOP language in wide use (*Turbo Pascal* being available only on the PC-DOS platform and somewhat less advanced, too). Hopefully, this should serve as a demonstration that, indeed, C is a language much closer to Pascal (or many others) than to its upward-compatible offspring, C++. Yes, we could use our newly-acquired terminology to say that C++ is *derived* from C, in the strict OOP sense of this term. Who said programming languages have to be boring?

For the Record

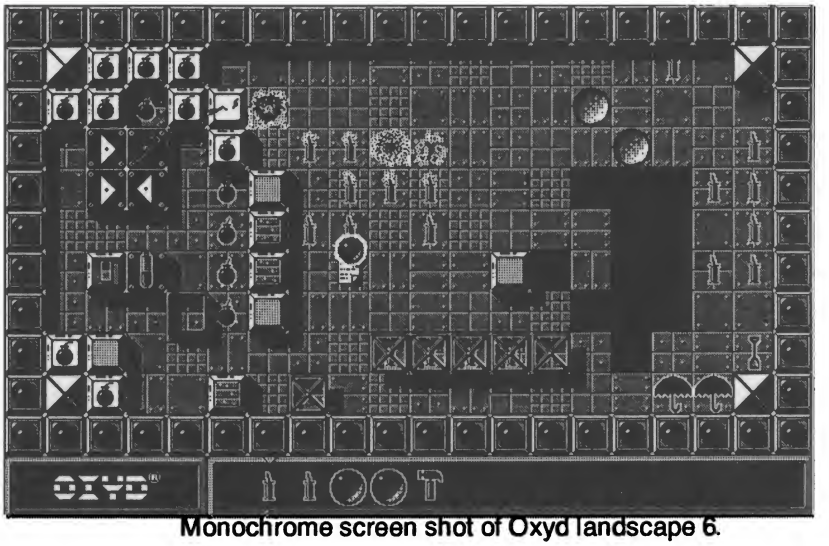
Just for the record: this month I haven't said a word about Atari Corporation or about Falcon being behind schedule (what schedule?). Too easy.



OXYD

Most Welcome Is the Unexpected Guest!

Review by Sam Van Wyck



Monochrome screen shot of Oxyd landscape 6.

It's not exactly a secret that the number of available programs for the Atari has been diminishing lately. Naturally, we expect this situation to improve as the new equipment becomes available. However, for the professional reviewer today, obtaining new material has become almost a cutthroat scramble with one's former brethren.

Thus, when a new product appears from a completely unexpected direction, and when that product turns out to be delightful in both concept and execution, it is indeed an occasion to be celebrated. Here begins the celebration of *OXYD* !

You Gotta Be Kidding!?

For several years, I have been a subscriber to *Computer Gaming World*, a slick, well–written magazine offering news and reviews of up to 100 games and simulations in each issue. Although the glory days of Atari were passing, each issue could be counted on to provide exciting stories and screen shots of new products available for both the 8– and 16–bit computers. Their Hall of Fame still lists such greats as *M.U.L.E.*, *Dungeon Master*, *Zork* and the original *Empire*, which dates back to 1978.

As time went by, however, the number of Atari oriented reviews slowly diminished toward zero. The 1992 issues were mainly an exercise in wishful thinking (Ah! To be able to enjoy *Empire Deluxe* or any of the new Mark Baldwin simulations!). Imagine, then, what your feelings would have been to see a review of a game promising 100 levels of solo play or 200 with a 2–player option via modem, color or mono versions, fantastic screen shots, compatibility with literally *everybody*, including Atari ST/STe/TT/Falcon, and costing only four bucks! Oh yeah, one small point: the game is four bucks, but the book is $39.00 plus shipping; and it's from Dongleware (DONGLEWARE?).

Wait a minute. Reality check. What's the date of this magazine. Yep! I knew it: April! OK people, you almost got me that time (again). I've bitten into the April Fool's apple more than once, in *Scientific American*, *QST*, *Byte* and a dozen other publications. You're not going to catch Big Dum–Dum Irving with your plausible lies! But DARN, it looked as if it would really be a great game.

But, There Is Good News!

Oxyd is for real, including all of the above. The closest I can get to suggesting a comparison would be *Marble Mad ness*, a game that I have never tried but which, I understand, had somewhat the same premise. One had to maneuver a marble from *here* to *there*, avoiding numerous traps and dangers. One reason I never tried *Marble Madness* was that it had a reputation for difficult control and a poor interface. I am happy to say that *Oxyd* shares none of these drawbacks. Control is smooth and the interface and various controls are excellent, if a bit slow.

As with many computer games, the basic premise takes a bit of tolerance and understanding, but not to worry: the effort is more than rewarded. It goes something like this: your computer is dying for lack of oxygen (don't argue, just stay with me, OK?). In order to supply the necessary oxygen, you must enter it and open the devices known as Oxyds. You do this by rolling a marble so as to touch them, causing them to open. Part of the challenge is that you can only open an Oxyd by touching two of the same type in sequence. Of course, there are always more than two around, so you have to remember which type is where so as to get the pairings correct. In this respect, the challenge resembles that of the game *Concentration*. There is more, however; far more!

The game is presented in a series of 100 "landscapes" or screens. Both the solo and dual player cooperative version have their own set of challenges. Each scenario is played in sequence, beginning with a simple challenge in Landscape #1 and progressing in both complexity and difficulty along the way. Once a landscape is mastered, a code number appears, enabling one to return to that position at a later time. The player may choose the basic game of simply opening all the Oxyds, or add the additional difficulty of having to work against time.

The variety of play is, literally, incredible. Forget the challenge of remembering which Oxyds are which. Getting TO them is the problem (and the fun). The obstacles are many and varied; expect to restart any landscape many times after losing your marble to a black hole, bomb, laser, swamp or worse. They may be pushed, avoided, blown up, or used in various ways. Restarting is via a simple keystroke.

While similar objects from one screen seem to work or react alike in later landscapes, the challenges are constantly

varied. Where with some games, after succeeding through three or four screens, one finds oneself back at the beginning with the action speeded up, *Oxyd* presents a series of different challenges that share a common heritage of experience.

Much of the variety comes from the number of different gadgets that may be encountered along the way. They range from pieces of paper, which may contain hints about solving the puzzle, extra marbles (lives), a game pause icon, dynamite, icons allowing the marble to roll over or jump empty space and so forth. A maximum of 13 items may be carried. Selection and use is via keyboard or mouse.

While *Oxyd* is always a cerebral challenge, it occasionally requires a good deal of dexterity and hand–eye coordination as well. Physical challenges may require threading a narrow path between hazards or jumping your marble over chasms and managing to stop the rebound from bouncing it right back over the cliff. In one scenario, deadly choppers follow wherever it goes.

They Make You a Deal You CAN Refuse!

Dongleware's marketing concept is remarkable. The game program is shareware. It may be copied, given away, traded, up/downloaded and used. (*Oxyd* is available through the CN Library: #774d–color version or #775d–Mono version.) There is even a message on the disk encouraging this. The first ten landscapes are free. The player may work through what amounts to ten percent of the total game as a demonstration. After that, in order to go on, the book, all 176 pages of it, must be employed.

The advantages of this process are obvious. The user isn't stuck with a lemon program that fails to deliver what was originally promised and purchased. Since there is no on–disk copy protection, there is no incentive for hackers; and the game may be run from a hard drive. Best of all, from the author/publisher point of view, the serious player of *Oxyd* is going to buy the product package because that's the only way the advanced game can be played. In the opinion of this reviewer, this is the most sensible and effective method yet for assuring both the satisfaction of the purchaser and the rights of the producers.

You WILL Read This Book!

A few readers may remember a form of copy protection that consisted of a hardware plug (Dongle) that had to be installed in a joystick port before the associated software would run. *Leader Board*, a golf simulation game, was one of these. The trouble with using a Dongle was (1) it was hard to find when you needed it or (2) impossible to find. Replacements were costly. Needless to say, the idea had little popularity with legitimate users and was easily hacked by the illegitimate.

In *Oxyd*, after landscape number ten, the only way you can progress is by having the book in hand. In addition to the usual "How To" instructions, it contains helpful hints and even some solutions to a few (19 to be exact) of the tougher puzzles. The larger part of the work is taken up by the "Dongle." The Dongle, in this case, is 143 pages of access codes that allow the player to remove little roadblocks known as "Tokens" from the path of the marble. Each page has 360 making a total of over 51,000 possible choices.

When a token is encountered, a simple documentation check allows it to be removed. It should be noted that if a landscape is replayed after losing all of one's marbles (pun intended!), a new token code will be required to proceed––a small price to pay for the advantages gained.

A Little Historical Background

Oxyd was conceived by Meinolf Schneider and first marketed in Germany. It bears a strong visual relationship to another game named *Bolo*, a form of advanced *Breakout* popular two or three years ago. This resemblance is hardly coincidental, as Mr. Schneider was the author of that program as well. I spoke with Klaus Schultheis at Dongleware who provided a bit of background about the author and his products.

Bolo was extremely successful, as far as popularity was concerned. Over 250,000 downloads were taken from European bulletin boards. However, Mr. Schneider received payment for only about 2,000, making his average return somewhat below that of a fast food employee. Similar discouraging results followed the release of *Esprit*, a game somewhat similar to *Oxyd*, and *Bolo Designer*, which allowed creation of additional *Bolo* challenges.

Mr. Schneider solved the dilemma of productivity and compensation by recreating the Dongle. His disk is copyrighted but is distributed in the manner of freeware in that no charge is made or requested if you choose to borrow a copy or download from your local BBS. The player may play the first ten landscapes in both solo and dual mode. After that point, it becomes commercialware, necessitating the purchase or loan of the book. The work carries an ISBN code and may be ordered by libraries for loan to their patrons (another interesting variation)!

Plans are in the works for the release of *Oxyd II* by Christmas, and possibly an *Oxyd Designer* as well. Whether or not it will be ported to the Atari is not known at this time. This will depend on sales. NOTE: If you do purchase the book, which is not computer–specific, be sure to let Klaus know that you are using an Atari! After being featured on GEnie as "Darlah's Treat," over 1,500 downloads were requested so, if you order the book, make certain your computer gets some credit.

If You Need Help, Just Call

On Thursday nights between 5 and 8 pm, a Dongleware representative will be on hand to answer questions about the game. This thoughtful feature assures the purchaser of being able to continue to enjoy the game even if, at some point, an impasse is reached.

Play Mechanics

The most logical tool for control of the magic marble is a mouse and a good mouse accelerator. Most of the time, a fast response is just right. Certain moves require a lot of input; and unless one is playing on a table the size of a tennis court,

reaching the edge could result in injury or worse, loss of the game.

In some instances, I found a trackball to be superior to the mouse. It was most advantageous when bumping things to move them a single space at a time. Underestimating the natural rebound of the marble can result in a *lot* of restarts.

The game plays in either low or high (mono) resolution. As mentioned, control is extremely smooth, with virtually no jitter, even in the low resolution mode. The color version is, at times, not particularly brilliant in terms of palette, but this shortcoming is more than made up for by the intricacy and clarity of the grey scale details. When full color is used, however, it adds greatly to the enjoyment.

Sound is very good but not overwhelming. There is excellent feedback in terms of marble impact and certain event clues. For instance, the opening of a door offscreen is announced by a very distinct noise. Thus, the result of an action may be understood from a distance away.

Drawbacks, If Any?

Well, I did mention that the game was a bit slow. If run from disk, loading seems to take forever. In these days of hard drive speed, anything over a few seconds seems long and *Oxyd* needs more than a minute from bootup. On the hard drive, figure about 15 seconds; longer than some programs, but not impossible.

Typing in a code number also feels clumsy. The appearance of the numbers and the associated sound feedback seem to have a built–in hesitation. Picky–picky, you say? Maybe so, but this is the only real fault that I could find in the system. Aside from these minor comments, score the game a solid "10." Oh yes, if you have a screensaver, turn it off. The program recognizes neither mouse nor keyboard input and your screen will blank just when things are getting interesting.

Have a Salted Peanut

It's been said that it's impossible to eat just one salted peanut and who'd want to? It's more fun to snarf a handful. Likewise, I think it would be very difficult to work through one or two of the *Oxyd* landscapes and not stay on for "just one more!" It's fun, addictive and you simply can't get a better deal than the free trial offer. Beg, borrow, steal or even buy it. You'll be glad you did!

Oxyd is distributed in the U.S. by: Dongleware Publishing, Inc., PO Box 391829, Cambridge MA 02139–0018, (617) 497–1130. Order line: 1– 800–228–OXYD. If you order from the company, the disk is $4; the book $42 more, including S+H. In Massachusetts, add 5% tax. The disk is also available from the CN Library: #774(C) or #775(M).

Hints and comments may be exchanged with the author via GEnie. Address: S.VANWYCK1.

Elf-Boot! V1.3

A GEM From the Start

Review by Mike DeMellia

There are many ST programs user that are used only upon "booting" the machine, that is, when you first turn it on. If you own a hard drive, you've probably collected many more desk accessories, TSR's (Terminate and Stay Resident programs), and configuration files than you would ever need to use in one session at the computer. That's why you need this program. *Elf-Boot!* is a utility meant to aid in the start up configuration of your ST.

Now, if you're not used to having "fine" control over your computer, you may be surprised at exactly how much you can customize its starting configuration with a program like *Elf-Boot!* For starters, you can choose one of 50 desktop setups. These setups, known to ST experts as desktop.inf files, allow you to pre-configure your printer settings, keyboard repeat rate and delay, warning bells and key click sounds off or on. If you're brave, and want to speed up your ST, you can also choose to turn off confirmation dialog boxes that appear when copying and deleting files, and write verify, as well. That's the disk operation that verifies whether information was properly written to the disk. You can also activate any one of 50 preset ASSIGN.SYS files, used with GDOS, the Atari font software. If you use a ram-disk, a very fast disk drive simulated in the computer's temporary memory, you can start it up and copy files to it automatically.

The main function of *Elf-Boot!* is to allow you to choose which programs run from your auto folder and which desk accessories are enabled. This is useful since it lets you exclude unused programs from taking up precious memory. Desk accessories, unlike TSR's, have only six slots allotted to them. *Elf-Boot!* allows you to pick which six will fill the slots. Now, there are a few other shareware programs that offer these same functions, but where *Elf-Boot!* shines is the interface that it provides. Mr. Constan has coded his own little version of GEM, so you can use your mouse pointer and dialog boxes to set up the program. This is no mean feat. The operating system does not normally allow a GEM-type program to run from the auto folder. *Elf-Boot!* goes a long way to provide a comfortable and easy to use control environment.

Of course, a program like *Elf-Boot!* would not be complete without a way to setup and save the various configurations you devise. *Elf–Boot!* provides two methods. Elf-Help is an external program that aids in the setup of information files used by the RAMdisk and several other utility programs. From within *Elf-Boot!*, just set up your computer the way you want it and click the Record button. That's it; you've now got a permanent configuration file that you can call up with just one key.

The manual provided with the software does a good job of bringing the first time user through the steps of setting up the program. It's not long, but it provides all the information you'll need. I didn't run into any compatibility problems while using *Elf-Boot!*, but don't be surprised if you run into a problem every once in a while. Auto folder programs are notoriously finicky.

In the end, the GEM-like interface provided by *Elf-Boot!* is what will win you over to it from some of the other boot configuration programs. It's definitely worth a serious look.

[*Elf-Boot!*, Elfin Magic Co., 23 Brook Place, Islip, NY 11730.]

GEnie® NOTES

by Lou Rocha

This June installment of GEnie Notes is being written a few weeks after dealer models of the Falcon030 have reached the stores. Bob Brodie reported in the May 7th RTC that another shipment was on its way to North America by boat. With any luck, you will be able to find Falcons in large quanities as you read this article. In the meantime, there are hundreds of messages, appearing weekly in the ST RoundTable, about the Falcon and its dedicated software products. This month's column includes Brian Harvey's report on the April Real Time Conferences, Larry Duke's overview of programming software in the library, my info file on downloading protocols used on GEnie, followed by a quick tour of the Sports RT and finished off with our customary User and Developer Spotlights. I hope you enjoy this month's report!

RTC Highlights

by Brian Harvey

Well, what can I say about this month in the Atari RoundTable? To say it was busy would be a gross understatement! Since my last article, Bob Brodie has been involved with three online conferences; and other Atari personalities, such as Bill Rehbock, Pradip Fatehpuria, and James Grunke have also been online.

Bill gave us some valuable information about CeBit on the 7th of April. Bill Rehbock is Atari's Technical Director of Software Development. He has been supervising the software development for the Falcon030 computers. CeBit is a very large German trade show and is primarily a showcase for new products.

One potential big seller is *Blackmail* by Digital Optical Analog. This Falcon-based voice mail system is currently undergoing FCC certification. Of interest to many database fanatics was Bill's announcement that *Superbase4* (HiSoft/Oxxi) will be in alpha release within two or three weeks. This upgrade has full SpeedoGDOS support and support for imbedding a wide variety of graphic data formats into your database. Not only will it maintain compatibility with *Superbase Professional* but also allows importing forms from *Superbase Amiga*. Good news for Atari concerns ColorDISC PCD. Atari is currently the only platform which has complete support for interactive/Portfolio PhotoCD, including a PhotoCD module for *Calamus SL*.

What else did Bill have to say? Too much for the space I am allowed here! How about information about MPEG Decompression (Brainstorm), Overscan Video Titler (Compo), Xenomorph (Phoenix), Papyrus (ROM Software), and Cubase Audio (Steinberg Steinberg). These are only a few of the developers talked about at the Rehbock's CeBit Real Time Conference! It took me two readings to remember all the information presented by Bob.

Bill also discussed Atari's dealers plans and said that several NeXT developers have been signed up. However, it may take a while for them to learn enough about TOS for us to see some results.

On April 12 Bob Brodie and Pradip Fatehpuria were the guests for the first half of a double Dateline! This double was sort of like double dating! GEnie users got twice as much information from Atari! It was at this conference that Bob announced that the Atari Falcon030s had arrived in the US and were going through US Customs.

Who is Pradip Fatehpuria? Pradip is the author and programmer of Atari's new integrated application, aptly called *Atari Works*. Pradip and Bob answered numerous questions about this integrated word processor, spread sheet, and database program. Bob stated that Pradip is working on supporting the Lotus 1-2-3 and Excel file formats. Pradip mentioned that it is truly integrated. You can take data from the database and copy it into the spreadsheet to create graphs & charts. From there it can be transposed into the word processor. In fact, all formatting is maintained when you copy spreadsheet or database data and paste it to the word processor document. *Atari Works* comes with 14 BitStream fonts and should be available within ninety days (June '93). AW includes a 135,000 word Proximity dictionary and a 450,000 word thesaurus with definitions for each word.

On the 14th of April, Bob was back with a different guest. James Grunke, the Director of Atari Music, joined Bob Brodie to discuss the Falcon030's music capabilities. Bob stated that James had recently brought on board sixteen manufacturer rep firms specializing in Music and Pro Audio channel.

John Brenner informed us that he heard the output of the Falcon was heavily bass boosted to use with headphones. However, Bob reassured us that the bass boost section was eliminated at the request of the music developers so that audio would run flat.

According to Bob, there are three Genlocks being developed and all three are under $500.00. This should make the video market more accessible to the home hobbyist.

On the subject of modems, Bob clarified some of the rumors by stating that there is a DSP chip modem being developed, and it will be about the size of a pack of cards. At the same time, existing modems have been hooked up to a FALCON. This modem use is one of the non-music uses of the DSP chip. Data compression, decompression, voice mail, fractal generation, and other uses are probable.

DMC Publishing was the guest at the RTC on the 19th of April and both Nathan Potechin, President of DMC Publishing, and Mario Georgiou, resident graphic artist, were

present. Nathan and Mario discussed *Outline Art 3.0, Calamus* and most of the DMC line of products.

Outline Art 3.0 is a stand–alone program with many non-Calamus users, such as *PageStream* owners. The new features of *Outline Art* are too numerous to discuss here, but some that interest me are more import/export options, color tables, keyboard equivalents and online context sensitive help. The new help feature will definitely help a new *Outline Art* user, like myself, by providing complete descriptions from inside the program. Nathan also told us about DMC's Calamus Service Bureau. Now DMC proudly offers 1200 and 2400 dpi output for letter, legal or tabloid size film or typesetters paper. Files may be sent via modem to GEnie or direct to DMC upon request.

There are new modules out for *Calamus SL*, such as the Toolbox, Clipboard and Mask. DMC also has the new Kodak Photo CD Import Driver. Nathan mentioned 350 brand new fonts from the famous Berthold Font Foundry and the release later this year of a Windows NT version of *Calamus SL*. The NT version will be compatible with all Atari created CDK's.

The next RTC, held on the 21st of April, had Purple Mountain Computers (PMC) as the guest. In attendance were Oscar Steele (PMC) and Darek Mihocka (Branch Always Software). This RTC is the first half of two from PMC.

Oscar explained the new features in the upgraded version of *Stealth PMC 1.5*. Yes, a new version of Stealth! The main new features are the ability to use *Edhak* or *STeno* as capture buffers and auto Z-modem detection for downloading.

According to Darek, with the *Gemulator* you can run most Atari ST software as well as a real ST. Why? Darek stated that the *Gemulator* eliminates the 4 meg barrier, the 640x400 barrier, and other limitations. It requires a 25 Mhz 486SX chip to achieve full speed ST (8mHz) emulation. Of course, with a faster processor you can achieve emulation faster than the real thing.

Darek hinted at the new features in the next version of his famous *Gemulator* which will ship in May. With the new version of *Gemulator*, you will be able to run ST Xformer 2.5 and get the same features as on the ST. This will include reading and writing 8-bit programs directly to the PC's floppy disk or hard disk. It will also emulate all the 8-bit graphics modes, run BASIC, DOS 2.5, etc. A possible Mac emulator? Well, that's to be found out at the next RTC in May!!

Oscar mentioned *EZ-Back*. This is a hard drive backup program that is very easy to use, relatively fast, and bullet-proof. It is an incremental backup program and the files can be backed up to floptical or SyQuest. The price of *EZ-Back* is very reasonable. It is FREE. It has a different focus than *Diamond Back*. *EZ-Back* is basically for Syquest and Floptical backups from hard drive partitions.

Still here? The last RTC of the month was with Peter Zalesak of ABC Solutions, who specialize in productivity software for the Atari ST/TT.

Peter was joined by Tony Biasutti, the developer of tbx-CAD. This program is a low cost yet highly featured CAD program. Tony stated that the interface and command structure are intuitive and easy to learn.

Peter also discussed *Home Accounts 2*, the personal finance manager for the ST. It has one of the best user interfaces of any ST program. According to Peter, he found Home Accounts 2 to be far easier to use than *Pha$ar*.

Other ABC Solutions programs were discussed, such as Kuma's *K-Spread 4* and *4 Lite*. Peter admitted that LDW has the edge in speed, but *KS4* has the edge in features. Particularly nice is *KS4*'s ability to use GDOS fonts. ABC also sells the long awaited update to *Timeworks Desktop Publisher* called *Publisher 2 ST*.

Well, no space left to say anything else! Next month won't be slow either with four RTCs to cover! See you then.

ST Library Report

by Larry Duke

One of my personal favorite libraries in the ST RoundTable is #3 - Language/Programming. As a moderately devoted software engineer (that's a fancy name for a programmer), I often peruse this library for help in some projects - hints, programming utilities, or other programs similar to the one I want to write.

It doesn't matter what your language of preference is: ST BASIC, GFA BASIC, C, Assembly, or even Forth and Pilot. The library supports all of these languages and more. Information about the Cookie Jar, stealing system vectors, programming in GEM and more are available to give your programs that professional look and feel. The BBS archives also contain some exceptional information from the imaginative minds of the GEnie users. Let's take a look at some of the files for programming available in the ST Library:

Tim Oren's ProGEM Series

The ProGEM columns were a series of articles and GEM tutorials written by Tim Oren a few years ago. The numerous articles covered everything from windows to menus to dialog boxes, and included C source code to show you how to get some tricky jobs done. The file numbers for this exceptional sequence are too numerous to include here - just do a library search (option 3 from the ST Library menu) for PROGEM and you should be able to find all of them. An index of articles is available as file #963.

FORTH83.ARC - #9078

Do you ever have an overwhelming desire to use reverse polish notation? If you have, here's your chance to show your friends that you know what it is! FORTH-83 is a complete programming language with strengths of its own.

CMDMENTS.ARC - #14018

Most of us have thought of stealing vectors from the operating system to enact our own patches and changes. The CodeHeads put this file out to help all of us keep these little software hacks working smoothly with some of the others you probably have loaded into your system now. By following the steps outlined in this article, programs that steal system vectors SHOULD work in harmony with each other (please note the word "should" in the previous sentence).

ORCS.LZH - #24403

Otto's Resource Construction Set (ORCS) is used for creating dialog boxes, icons, alert boxes, and menus. This resource construction set (RCS) allows you to create the general look of your program before you write the code. This is a very good version of a "Gotta-have" utility.

For GFA BASIC, there are numerous files to include resources within your program, play digitized sounds, as well as various and sundry other helpful utilities and program clips you can use to enhance your GFA BASIC programs. Again, these files are far too numerous to list individually - search the library for GFA.

There are also Public Domain versions of Assemblers, C Compilers, and some other very inventive languages in the library. A complete listing of the Language /Programming library is available for downloading. Search the library for _PROGRAM (note the underscore at the beginning of the name) to get the latest compilation.

The library contains most everything a programmer would need to write his next masterpiece. We really look forward to seeing your programming uploads.

What's in store for next month? I'm not sure, yet. Some of the library articles coming up include Desktop Publishing, Library Trivia, Animations, "Fun" Programs, Backup Utilities, Business Software, and much more. I can't wait to see what I write about next month!

GEnie Tip – Downloading Protocols

by Lou Rocha

This is the first of two articles about downloading files from GEnie. This month we will examine the transfer protocols. This information was originally compiled by sysop Larry Duke. Next month we will feature a mini-tutorial on downloading files.

YMODEM and YMODEM Batch

To benefit from the many files in the Atari ST Software Library, you must first be able to transfer them to your computer. This transfer process is commonly known as DOWNLOADING. The files on GEnie are in the Public Domain, to the best of the staff's knowledge, and are available to you, for downloading, at no additional costs, outside of your normal connect time fees.

To download these files, you MUST have a terminal program that will support the YMODEM file transfer protocol. If you are in need of such a program, you can get one of the many Public Domain ones from your local user's group, or contact DARLAH on how to receive one via the USMail. Most commercially available terminal programs have the YMODEM protocol also.

Be aware, due to YMODEM, only standard filenames will be accepted. All others will be changed by the sysops without permission. The standard filenames must consist of UP to 8 characters and a 3 character extension. An example: FILENAME.HLP or TEST.HLP

GEnie's version of YMODEM supports YMODEM-G protocols, also. If you have an error correcting modem, use the YMODEM-G protocol if it's available on YOUR terminal program. This makes YMODEM the fastest possible downloading protocol on GEnie to date.

Please Note: Ymodem-G is for error correcting modems. If you do not have a modem that is currently supporting MNP-4, you should not use Ymodem-G. It will not work.

ZMODEM

ZMODEM is one of the newest protocols in use on GEnie. There are some really nice advantages to this protocol, though everyone may not wish to use them. Let's examine the ZMODEM protocol.

ZMODEM blocks are defined by the speed of the modem. At 2400 baud, the ZMODEM blocks are 512 bytes in length, and go to 1,024 byte lengths at 9600 baud. This was done to allow the greatest efficiency in the event a block needed to be retransmitted for any reason.

ZMODEM is also a bi-directional protocol. In other words, you will continue to receive information as you transmit. This is done internally by the ZMODEM program of your terminal emulator software and by GEnie. This enhancement means that you will no longer have blank periods of no transmission as the host computer (GEnie) awaits the acknowledgement of the remote (yours). Greater efficiency is gained in doing this.

Some of the advantages of ZMODEM include:

► Exact file lengths. There is no padding in ZMODEM - once the file is at the end, ZMODEM terminates. (Other protocols will continue to the end of the transmission length block, padding with either file length bytes, Control-Z symbols, or the null character).

► The ability to CONTINUE an aborted download. If you've ever had a download go astray on you when you are 1K from the end, you'll immediately appreciate this enhancement. When ZMODEM sees that you have the same file on your disk already, it will assume the previous upload was aborted, and only send you the portion of the file you need. This saves LOTS of time and LOTS of frustrations.

► Very good line-noise correction. ZMODEM uses either a 16-bit or 32-bit CRC error correction, giving VERY high reliability of the data.

► Different send modes for text or compressed data. This gives a very high transfer rate, depending on the data received.

► It is a BATCH download protocol. You can request up to 20 files to be sent to you from GEnie at a time (This is a GEnie imposed limit, and not one of ZMODEM).

► Most ZMODEM programs are "auto-start" so you don't have to do anything on your computer to get them started. ZMODEM sends an initialization string from the host to the remote to trigger downloading. Most of the new terminal programs (STalker, STorm, and the like) will automatically start downloading when this string is encountered.

What are the disadvantages of ZMODEM? Mainly, that older terminal emulation software doesn't have this support. There are, however, programs available in the GEnie ST Libraries that give you ZMODEM downloading capabilities.

Check the libraries for the latest version of Alan Hamilton's XYZ program for a very good ZMODEM downloading protocol that most terminal emulators can use. Next month we will examine the methods for searching and downloading files for the 40 library areas in the ST RoundTable.

Around GEnie - The Sports RT

by Lou Rocha

This month we're off to the Sports RoundTable - a place where you can participate in up-to-the-minute discussions about all kinds of sports, leagues and computer-related topics. The following article was submitted by Glen Johnson and Duncan Koerber, sysops in the Sports RT.

GEnie's Sports RoundTable is a place to discuss the happenings in professional sports, recreational sports, fitness, and sports entertainment. The obvious areas of interest to the average fan are the Baseball, Hockey, Basketball and Football categories where topics exist for all the pro teams across North America. The other categories are devoted to equally popular, but maybe lesser-known sports like Cycling and Soccer, along with computer sports games and Fantasy leagues. Name it, it's there! Canoeing, skiing, figure skating, horse racing, tennis, golf, whitewater rafting, fishing, hiking, softball, college sports; the list is virtually endless.

Fantasy leagues draw as much interest, maybe more, as the discussion of the sport itself. Right now there are fourteen independent and RT-run fantasy leagues for all four pro sports. Some leagues are based on the previous season's statistics, where owners manage teams which perform on a computer or board game. Other leagues play head-to-head over a modem, with results and discussion posted in the Bulletin Board. Players involved in leagues which depend upon current major league statistics make good use of the Pro Sports discussion categories where the latest info on real world player trades, slumps and problems can be found from local fans across the country. The local fans are a great source of information because they follow their team day-in, day-out, and are probably the best at giving a thorough game report on their team. This helps the fans hundreds of miles away who must otherwise read sparse, fifty-word game summaries in their local newspapers to keep up with their favorite players.

There's also a real time conference area (RTC), where members can go and "chat" live with each other. RTCs are often used for fantasy league drafts, as well as general chew-the-rag sessions. The Sports RT also has file libraries where you'll find public domain and shareware sports related files as well as fantasy league statistics.

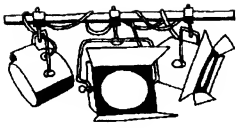
The sports bulletin board is part of the GEnie*Basic service plan. There are NO connect time charges while in the bulletin board area during non-prime time!

The Sports RoundTable is managed by Glen Johnson - a member of GEnie since 1986 and a SysOp since 1989. He hails from northern New Jersey, and is an avid New York area sports fan. Johnson is assisted by Duncan Koerber, who oversees the file libraries and fantasy leagues. Koerber is from Mississauga, Ontario.

User Spotlight:

by Lou Rocha

Jim Renner



Jim is a regular in the ST RT with a little different background from most other users. As manager of The Software House in Rochester, NY, he has an interesting perspective on Atari computers in relation to the rest of the market.

Jim, would you please provide a little background information on your computer origins?

I started out in computers, when I was about 11, with an Atari 400. The 400 supplied me with an easy-to-use computer with which I taught myself BASIC programming, database use, word processing, and, of course, games. Lots of games. I added a floppy drive later on, replacing that old 410 cassette drive, and an 800XL soon followed. When it was time for college, I decided to stick with Atari (the Amiga was tempting) and purchased a 1040ST. I added a mono monitor, then a hard drive and extra memory. As I got more and more into publishing with *Calamus SL* the realization hit me that a faster machine was needed. The question was should I go for a TT or move to the DOS platform for a larger software base? Well, this is being typed on a TT that has been in use for five months, and there has never been a single regret for buying it.

With the access you have to computer products, our readers would be interested in knowing what you do use?

My current system consists on a TT030 with 8Mb RAM, 80Mb hard drive, Megafile 60, Goldstar color monitor, Panasonic laser printer, Zoom fax modem, and a Spectre GCR (for that occasional game that isn't released for the ST, like Harpoon). My software usage is fairly simple: *Calamus SL*, *Aladdin*, Games, *Touch Up*, *Migraph OCR*, Games, *Superbase Pro*, and, of course, my system never boots up without *Warp9*, the best utility for the ST/TT. What games do I play? *Civilization* is my current favorite, and others are usually strategy games or simulations.

What areas of GEnie do you visit?

Most of my activity on GEnie is in the ST RoundTable, although I do frequent the sports, entertainment, and certain manufacturers' roundtables. Working at a computer retail store, GEnie gives me access to industry information, tech support, and new drivers for Windows and other program updates. I try to use the knowledge I've acquired working with computers everyday to answer people's questions and occasionally give my opinion on one subject or another. Most of my questions are in the *Calamus* area and probably most of my time on GEnie is spent reading, writing, and pondering *Calamus* messages.

As a retailer, what kind of advice would you offer to Atari to help make their products more successful?

I think Atari has done fairly well, recently, in reducing their overhead and working at increasing the dealer support in the U.S. The sale of their manufacturing facility and the decision to produce TTs (and other products) as needed were sound business decisions. Any store or manufacturer has to walk a fine line when deciding how much of a product to stock. If you stock too little and demand is high you will lose

customers. On the other hand, overstocking can quickly reduce profit margins if product costs are reduced. Getting stuck with over-priced goods doesn't help make you competitive.

As far as keeping the ST/TT/Falcon platform viable, that is going to be more difficult. *MultiTOS* and *Photo CD* are good examples of Atari keeping up with the rest of the industry. The DSP and 16 bit sound (in the Falcon) will help U.S. music sales, which I believe is the only large market for Atari. Continued European support for the systems is important as that is where most of the major applications are, and will be coming from. There must be a bigger horsepower Falcon released in the near future and a move to the PowerPC processors from Motorola would be a smart decision.

On a more local level, what kind of advice to you give to prospective computer buyers when they enter your store?

When a customer comes into the store and he is not sure which platform or what configuration he needs, I have a very simple exercise for him. By listing the top ten uses he has now or will have in the next year it gives me an idea what kind of machine he needs. For general use, education, games, or business, the IBM clones are the best choice. For serious video, the Amiga is a great machine. I would love to push the Atari platform more than I do but unless someone is looking for a dedicated publishing platform or a music system it is difficult to steer them away from the DOS and Windows world. Finding individual applications before deciding on a system cannot only help in the platform choice but also on the memory, hard drive, and video specifications.

What are some of your more memorable experiences working in the computer retail field?

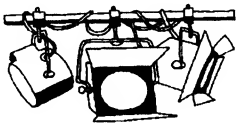
Boy, that's a tough one. Working in retail there really aren't many memorable experiences that aren't bad. Probably my best experience with Atari has been the fact that every machine I have owned has never needed service. With all the 520s and 1040s I saw coming into the store with loose MMUs and other problems, the fact that I used my 1040 for seven years with no problems was a great surprise. Now I have my TT, and still have had no problems.

My worst Atari experience would have to be trying to get *Dac Easy Accounting* set up and working on my brother's ST. I had convinced him, if he wanted my help setting up his business on a computer, he should buy an ST so I could do work for him at home and then just take it to him. Well, needless to say, we gave up on *Dac Easy* which was one of the worst software packages I have ever seen. It didn't use GEM, required you to set up all accounts beforehand, and required a lot of disk swapping. Now we are using *Superbase Pro*, *Word Writer*, *Calamus SL*; no problems and no regrets for going with the ST.

Have you ever had computer problem that made you happy to get home to your Atari?

My worst experience ever would be a week long headache with six PC compatibles that we sold to a local CPA. The systems were networked and they were all having hard drive problems. We tried to convince the customer that it was a software problem, but their 'consultant' (pocket protector and all) told us it couldn't be. Needless to say we replaced all the Maxtor drives with Seagates and the problems went away. Weeks later we discovered that the memory manager they were using, 386MAX, had gone to a new version that was incompatible with Maxtor and some other IDE drives. So it was a software problem, after all. Most of the problems I run into day in and day out are almost always hardware conflicts/incompatibilities and memory management.

Jim, thanks for taking the time to do this interview. Your broad perspective provided several interesting points of information. Good luck in your future endeavours and we'll see you online.



Developer Spotlight:
by Lou Rocha

Fair Dinkum

Our spotlight falls on John Hutchinson of Fair Dinkum Technologies, developer of Crossword Creator II, Word Search Creator and The Cyptographer, among other fine products. Hutch tells us about the origins of Fair Dinkum as well as future directions. Read on for interesting new product information!

Welcome to GEnie Notes, Hutch. Let's begin with a description of your origins as a user and a developer.

My first personal computer was an Atari 400 that I purchased back in 1982. I quickly tired of the plastic membrane keyboard and upgraded to an Atari 800 with a whopping 48K of RAM (how could anyone ever need more than that?) :) That 800 served me well for years, even though I added several other 8-bit machines to my collection. I wrote a few articles and programs for magazines such as *Compute ST* and *Antic* (anyone remember the 8-bit version of "Naval Battle?"). I snatched up the very first 520ST that appeared in Kansas City and soon swapped that out for a 1040ST back in the days of "Power without the Price!"

Over the years, I've run the gamut from general-funky-member to President of several Atari user groups both in the U.S. and Australia (my adoptive second homeland). User groups have been a great experience for me and I urge everyone to join and support one. After writing a series of articles and programs for *STart* magazine, I finally decided to establish my own software firm, which I named "Fair Dinkum Technologies," borrowing on the popular Australian strine (slang) term for "truth." Now you finally know what it really means, eh?

Our slogan, "No worries, mate . . . it's from Fair Dinkum," is much more than just a silly phrase. It's the very foundation of our business aim; to provide quality software at a reasonable price with unbeatable customer service and support. If there are any unsatisfied users of Fair Dinkum software out there, it's only because they haven't yet given us a chance to make them happy. It's not always a profitable way to run a business, but it's the only way this one will ever be operated!

Tell us about the products you have developed.

Fair Dinkum's first commercial product was *Crossword Creator II* (CWCII) and continues to this day to be our most

popular offering. It has been continually refined with numerous enhancements, most of which were based on user requests and suggestions. That's where our best ideas come from! Next came *Word Search Creator* (WSC), a companion product to CWCII, and then *Puzzle Pack* which is a bundled package consisting of both CWCII and WSC. A very specialized product called *The Cryptographer* was the next addition to the Fair Dinkum lineup. It's a unique little program that allows the user to explore the world of Cryptography (secret codes and ciphers) and provides an intelligent interface to help the user actually break (decode) ciphers.

Our latest product is *Cyberdrome–The Hoverjet Simulator* which was written by the talented team of Joe and David Rhea of Rhea-FX in San Dimas, California. Seriously, *Cyberdrome* is the probably the very best 2-player/2-computer action/adventure game I've seen on any platform. It's not your typical, mindless, shoot-anything-that-moves arcade game. Rather, it requires considerable strategy as well as quick reflexes and *teamwork* to complete the higher levels. In fact, we have yet to have anyone complete Level 6 so we have extended our Cyberdrome Level 6 contest for another year. I may NEVER have to give out a Cyberdrome Champion T-shirt! :)

Oh, I also compiled the *GFA BASIC Toolkit-Volume 1* book and disk which is published by Clay Walnum of Taylor Ridge Books. Before you ask, Volume 2 of this popular book has been put on hold, at least for the time being, due to competing priorities. There's only so many hours in a day, ya know, mate? ‹sigh›

May we have a look at your workshop?

Like most Atari developers, Fair Dinkum Technologies is primarily a one-man operation, although I frequently "draft" my wife or two teenage sons when work piles up. We are not quite ready to take over the Microsoft Headquarters building but we are working on it. :) Our development hardware consists of a 1Mb ST, 4Mb MegaSTe, Macintosh, 486 PC, SyQuest drives, scanner, an Epson FX, HP DeskJet, and a shiny new NEC Postscript laser printer and fax. Having multiple computer platforms allows for a great deal of flexibility but still, nothing compares to the overall ease of use and programming productivity I find with the Atari platforms.

I utilize a rather narrow suite of programming tools and general utilities, preferring to stick with what I know works well. While "dangerously familiar" with Pascal, C and a few other programming languages, I personally prefer to use GFA BASIC for most of my development work because I find it offers the best "bang for the buck." Of course, I'm not too stubborn to incorporate the occasional C or assembly routine, when it best fits the need. On the Mac, I use either Think C or QuickBasic and on the PC I use Visual Basic and GFA BASIC for DOS and their fantastic new Windows BASIC. Borland C++ 3.1 sits on my shelf, awaiting discovery. :)

Please describe your participation/support on GEnie.

I have always found GEnie to be a tremendous bargain among all the other telecommunications services, and this is particularly true for Atari users! I currently maintain two product support topics on GEnie... Category 29 (Education), Topic 4 is the general support category for all Fair Dinkum products. Category 9 (Games), Topic 14 is the special support area set aside for Cyberdrome–The Hoverjet Simulator. Users are always encouraged to drop by either area to ask questions about our products or just to say "G'day." Users are also invited to send GEmail to "FAIR-DINKUM" (or my alternate address, "HUTCH"). I log onto GEnie daily so you will seldom have to wait long for a reply. I'm also frequently found stalking the flame-infested pathways of the Internet. Fair Dinkum is also an active member of the IAAD (Independent Association of Atari Developers).

What future directions do you foresee for Fair Dinkum Technologies?

I am proud to report that Fair Dinkum's entire product lineup is now Falcon030 compatible in ST resolutions. If demand so merits, Falcon specific versions will be developed, as well. It's not that difficult, but the demand has got to be there to justify the effort. French, German and Dutch versions of *Crossword Creator II* are now nearing their beta completion stage.

We have some really exciting new products (and equally exciting promotional plans) on the burner for the Atari platform which I hope will be available "real soon now." :) These include several GFA programming utilities, some games and a couple of books. One particular product in the works promises a LOT of excitement, trust me! I'm sorry that I can't divulge any more hints but look for an official announcement in a couple of weeks or at the latest, during our scheduled GEnie RTC on June 23rd.

We are in the process of installing an automated information/order line from which the caller may obtain the latest pre-recorded product information, place an order, or leave a message at any time, 24 hours per day.

While Atari will continue to be Fair Dinkum's "main squeeze" for the forseeable future, we will be gradually expanding our product line to support other platforms such as the PC and the Mac. To be perfectly honest, I'd prefer to concentrate fully on the Atari but, unfortunately, market conditions at this time just don't make that economically feasible. That's up to YOU, dear reader. ;-)

What advice would you give to future developers?

To make money, program for the PC. To have fun, program for the Atari. To learn the true meaning of frustration, program for the Mac. All other platforms need not apply. :)

Do you have any suggestions on how to improve the Atari platform?

Well, the Falcon030 is a step in the right direction, IMHO, but I hope it's not "too little, too late." It's still a far shot from my dream machine. If I could only take my Mega STe, Mac and PC and combine the best features of each I'd have the ultimate personal computer. Of course, a shot or two from an (SGI) Silicon Graphics and yes, even a Sun UNIX box would help too. :) But still, the Falcon030 is a great improvement, especially in the graphics arena, which is where the Atari platform has really fallen short over the last few years.

Atari needs to standardize on a 640x480x256 color format as the BASE resolution and go up from there. It's a shame to have puny, el cheapo PC clones offering 1280x1024x16.8 million color options. The Falcon's DSP was a great technological breakthrough, but, other than for music and game applications, it's potential remains relatively untapped. Like most everyone else in the world, I would really like to see a Falcon built around a speedy 68040 chip and placed in an easily expandable case with a decent separate keyboard. The 16MHz 030 is fine for home use, but developers and power users hunger for much more, especially in light of today's speedy and relatively inexpensive PC clones and new Macs. Undoubtedly, Atari's future hangs in the balance of Falcon030 sales... SO GO BUY ONE!!! :)

Any concluding remarks, Hutch?

I just want to add a big thanks to all those individuals who have helped me as a user and then as a developer over the years. First of all, thanks to those who devote their time and energy in Atari user groups everywhere. Your efforts are noted and appreciated, believe me. Thanks also to D.A.Brumleve and other IAAD members who gave me the right start when Fair Dinkum was just getting started and for the continued support to keep us going through thin times. Thanks to Darlah Potechin and the entire GEnie crew for such outstanding support day after day. And a special thanks to all those customers who took a chance by actually BUYING software from some obscure outfit with the funny Australian-sounding name. Your comments, encouragement and kudos make it all worthwhile.

My association with Atarians over the years has been such a happy one that I can only hope it will continue for a long time to come. Thanx, mate!

John "Hutch" Hutchinson, Owner/General Manager Fair Dinkum Technologies P.O. Box 2 Los Alamos, NM 87544 Tel. (505) 662-7236 Fax (505) 662-3787

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The Whole Internet User's Guide & Catalog

Unravel the Mysteries of the Internet

Book Review by Phil Shapiro

The Internet used to be a great mystery. No longer. Virtually unknown to those who don't use it, the Internet is a vast collection of smaller and larger computers, all tied together to facilitate the exchange of electronic mail, text files, and public domain program files. Subsidized by the Federal government and the private sector, the Internet forms the backbone of a gigantic, decentralized communications system. It's a veritable treasure trove of information goodies for those who know how to use it.

The Internet came to life about 20 years ago to link U.S. Defense Department computers. It has since grown to connect academic researchers at colleges, universities, and government agencies. Many larger corporations have linked their internal electronic mail systems to the Internet, allowing for easy inter-corporate communications..

Originally intended to facilitate academic discourse and the sharing of research data, the Internet has grown to encompass a much broader purpose. These days the Internet links people with "non-academic" shared interests including bicycling, scuba diving, skiing, chess, and even Monty Python. Some people go so far as to use the Internet for electronic mail socializing. To give you an idea of its colossal size, in the past year, the number of people with Internet access has grown to approximately 20 million (internationally).

Until recently, the major drawback about the Internet was the difficulty of finding comprehensive instructions for using it. If you needed to use it, you'd inquire of the local system operator (sysop), who'd usually give you helpful suggestions and advice for your first dozen questions. After that, you'd start to feel as if you were encroaching on his or her goodwill. One of the motivations for writing this book was to create a standard, comprehensive source of information and advice for using the Internet so that ordinary users would not burden sysops with questions that had been repeatedly asked and answered before.

The Intended Audience

Ed Krol, the author of this helpful and interesting guide, has performed a public service by diligently and meticulously explaining much of what there is to know about using the Internet. He says that the book is intended for "the garden variety" computer user: "This book is intended for anyone who wants access to the Internet's tremendous resources.... It's designed for those who want to use the network, but who don't want to become professional networkers in order to use it. If you're a biologist, or a librarian, or a lawyer, or a clergyman, or a high school teacher, or _____ (fill in your profession here), there's a lot of material and data available that will help you do your job... Very specifically: while writing this book, my model audience was a new graduate student in some non-technical discpline (i.e., not computer science or any form of engineering) who needed to use the Internet to do research."

Letting the Contents Speak for Themselves

In reviewing a nonfiction how-to guidebook, it behooves the reviewer to include a copy of the table of contents within the review. If the author of such a book spent a year or more organizing the book into well-organized chapters, the least a reviewer (and periodical publisher) can do is to list those chapter headings for prospective readers of the book.

CONTENTS:

A Few Comments About the Typography of the Book

One thoughtful touch in this book is the carefully planned typography. The most technical pages of the book are made far less intimidating by boldfacing the key technical terms. Italics are, likewise, used to judiciously set apart the terminology from the text. And a non-proportionally spaced font is used to show the text you'd actually be seeing on your computer screen. These extra visual cues add greatly to the presentation of ideas in the book.

Less noticeable, but equally important, is the overall page layout of the book. Someone spent time making sure the pages were tastefully and attractively laid out. Layout makes all the difference in the world when you're trying to read explanations of a technical subject.

Bringing a Humorous Touch to Technical Subjects

Beyond the typography, the author, Krol, uses other devices to help bring warmth and vitality to the subject. Subtle humor is injected into the prose to help bring the drier subjects alive.

For example, when discussing the mechanics of mailing lists, Krol conjures up an imaginary group of "pencil collectors" to use as an example. "What if, rather than a private list of people, [the mailing] list would be available to anyone who wanted to take part in a discussion? We would like to allow anyone in the world, who wants to discuss pencil collecting, access to the address pencils@hoople.usnd.edu, where it would be forwarded to all the other participating collectors. You would receive everyone else's messages automatically; likewise, anything you send to this address would be 'broadcast' to pencil lovers worldwide."

The humor in the book doesn't hit you over the head. Rather, it's "smirckable" humor that gently pulls you along from page to page.

Emily Post Would be Delighted

It's not unusual for newcomers to telecommunications to put their feet in their mouths because they're unaware of established electronic mail etiquette. Krol passes along some solid etiquette advice in his chapter on electronic mail: "Never commit anything to e-mail that you wouldn't want to become public knowledge." Later, in the chapter on "network news," Krol continues his etiquette pointers with the advice: "Read before you post. Take some time getting to know both the system and the group. If you see any postings marked FAQ (Frequently Asked Questions), read them.... Your question may have already been discussed, ad nauseam, and you will look like a novice just asking it again."

The rest of the chapter on electronic mail explains about those long Internet mailing addresses you might have seen. (You know, the ones that contain about 36 characters, separated by at-sign (@) and percent (%) punctuation.) Krol points out that they're not as complicated or cumbersome as they look. And there are ways around having to actually type out the long Internet address each time you send or reply to an e-mail letter.

Giving You a Roadmap to Vast Information Warehouses

What really excited my interest in this book was the last fifty pages of the book, "Resources on the Internet." In these pages, the author explains where to find public domain text files and programs that might be in your particular area of interest. The information resources are divided up into topic areas, including many "non-technical" subject areas. A partial listing of these topics includes: Aeronautics and Astronautics, Anthropology, Biology, Computer Science, Environment, Freenets, Genealogy, Health, History, Hobbies and Crafts, Libraries, Literature, Music, Pets, Popular Culture, and Science Fiction.

Here, for instance, are a couple listings that caught my eye:

FDA Electronic Bulletin Board.
A bulletin board containing information on FDA (Food and Drug Administration) actions, congressional testimony, news releases, consumer information, AIDS, and veterinary medicine. For example, you can use this data base to find out what drugs have been approved recently.
Access via: telnet fdabbs.fda.gov; login bbs

Handicap News BBS Archive.
A collection of information and sources for and about the disabled. The archives include legal and medical data, in addition to information about social services.
Access via: ftp handicap.shel.isc-br.com; login anonymous
Note: Start with README to find your way around.

Another delectable information resource Krol describes is Project Gutenberg, "an ambitious nonprofit and volunteer effort to get as much literature as possible into machine readable format. The following are some of the texts available: Shakespeare's complete works, Moby Dick, Aesop's Fables, Alice in Wonderland, and Roget's Thesaurus."

The entire CIA World Factbook is available for downloading. This book contains detailed, searchable demographic information on 249 nations in the world.

You can even download the full-text of recent Supreme Court decisions from the Cleveland Freenet. Having the full text of the decisions in electronic format could be valuable to high school or college social studies teachers. You, yourself, can practice over-ruling the Supreme Court by replacing every instance of "impermissible" with "permissable," using the search-and-replace command in your word processor.

Getting onto the Internet

All this information about the Internet would be of limited practical use if there were no convenient way for you to access it. So the last section of the book gives the physical mailing addresses and phone numbers of various Internet "service providers."

Not listed in the book are some of the smaller, new Internet service providers which have sprung up recently. One such service, in the metropolitan Washington DC and Baltimore area, is Express Access. This company provides different levels of Internet access at different prices. The following information from their brochure summarizes what they have to offer:

Express Access costs $15 per month for an account that provides electronic mail and full newsgroup access. An account with complete Internet access (ftp, telnet, irc, etc.) is $25 per month. In both cases, you get up to an hour of time dialed into the system each day, with no restrictions as to the time of day. You can keep up to 2 megabytes (about 1,000 full screens) of information on our system for free (sometimes there are articles from newsgroups that you want to keep around for reference, or mail, etc.)

If you want to use more time than the one hour each day that is included, additional time is a dollar an hour; certain hours during each day incur no extra charge. Additional disk space is ten cents per megabyte per day (this lets you keep something large around for a few days if you need to, without having to pay for the extra disk for the whole month).

We have a special offer of a year's access (12 months) for the price of 10 months. Thus, for the e-mail and netnews only account, a year is $150 (payment in advance) and for the Internet services account (which also includes e-mail and netnews), it is $250 for a year (also, in advance). The year in advance payment does not cover additional connect time or disk storage, as listed above; we will bill you in electronic mail for them.

For further information about Express Access, or to sign up for an account, you can call (with your modem) to the follow phone numbers:

Washington DC (and pc-pursuit): 301-220-0462
Baltimore: 410-766-1855
telnet: digex.com [192.55.213.2]

Conclusion

For anyone interested in finding out more about what the Internet has to offer, The Whole Internet User's Guide & Catalog is an excellent place to start. As useful as a Fodor's travel guide, this book unravels many of the mysteries of using the Internet. Researchers, librarians, sysops, and non-professional Internet users could all benefit from having a copy of this book within easy reach.

(The author is the president of Balloons Software, a new educational software company. He can be reached on the Internet at: pro-novapple.cts.com)

[The Whole Internet User's Guide & Catalog, by Ed Krol, 376 pages, soft cover, $24.95. ISBN 1-56592-025-2. Publication release date: September, 1992. Published by: O'Reilly & Associates, Inc., 103 Morris St., Suite A, Sebastopol, CA 95472. Phone: 1-800-998-9938.]

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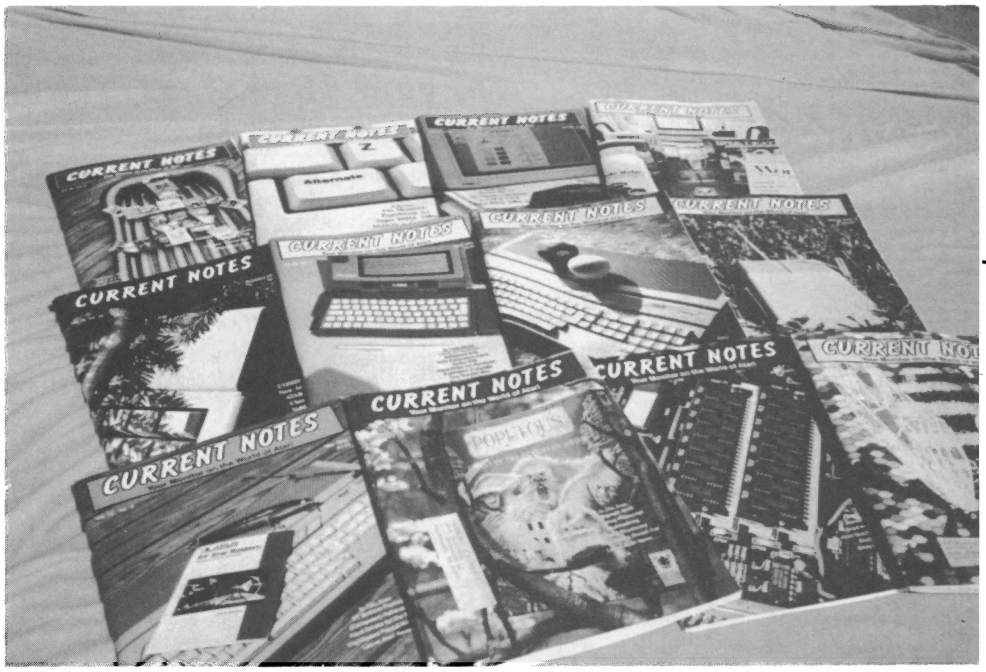

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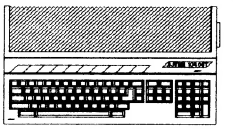

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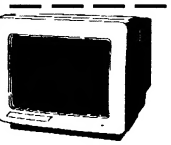

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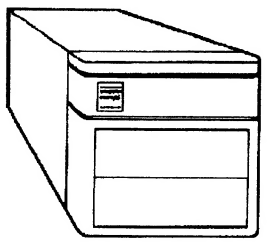

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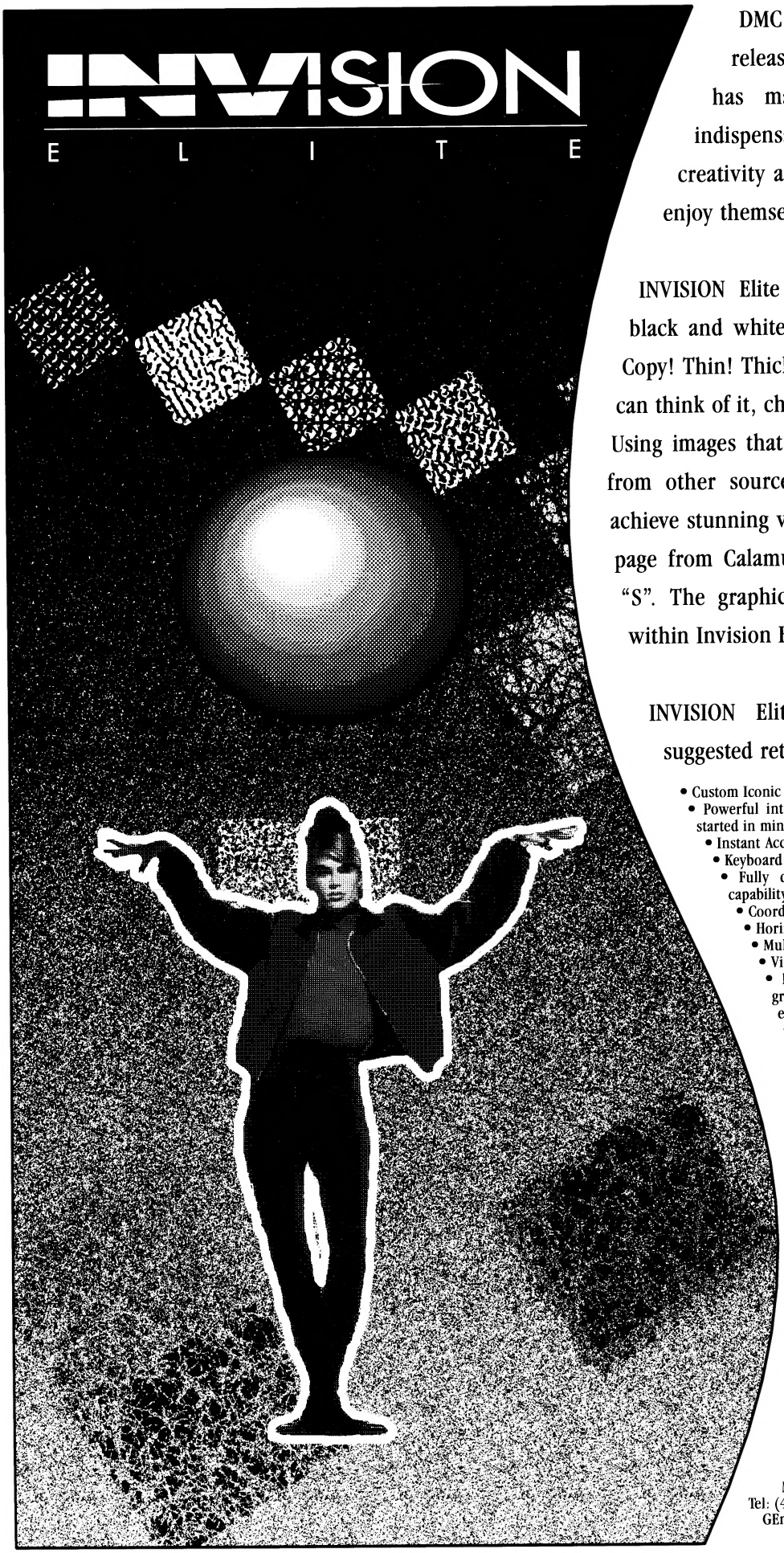

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